DOCUMENT RESUME

ED 481 114 TM 035 276

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TITLE	Impact Study of the National Board Certification Pilot Project in Iowa, Spring 2001.
INSTITUTION	Iowa State Dept. of Education, Des Moines.
PUB DATE	2001-06-00
NOTE	109p.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC05 Plus Postage.
DESCRIPTORS	*Administrators; Educational Quality; Pilot Projects; *Professional Development; Professional Services; *Program Effectiveness; Program Evaluation; *Teacher Certification; *Teachers
IDENTIFIERS	*Iowa

ABSTRACT

This study was conducted to investigate the effects of the National Board Certification Pilot Project in Iowa. Initiated in 1998, the Project provides monetary incentives for teacher certification, reimbursement for registration fees, and a support program for teachers pursuing certification. The effects of this program on teachers' professional development, provision of professional services, teacher induction and retention, and teaching quality were studied. Overall, 564 of the 1,018 teachers surveyed responded (55%). In addition, 287 principals of teachers who have been involved in certification were also surveyed. And 134 responded (47%). General findings indicate that teachers who have been involved in National Board Certification in Iowa are more involved in professional development activities, and provide more professional services to their school districts. They also demonstrate significant differences in teaching quality when compared to teachers who have not been involved in the certification process. The survey instruments are attached, and an appendix contains supplemental data tables. (Contains 23 tables, 29 figures, and 8 references.) (SLD)

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Impact Study of the National Board Certification Pilot Project in Iowa, Spring 2001

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June 2001

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Impact Study of the National Board Certification Pilot Project in Iowa, Spring 2001

Evaluation Report: Executive Summary

Background

The National Board for Professional Teaching Standards (NBPTS) is a private, nonprofit organization whose mission it is to "to establish high and rigorous standards for what accomplished teachers should know and be able to do; to develop and operate a national voluntary system to assess and certify teachers who meet these standards; and to advance related education reforms for the purpose of improving student learning in American schools" (NBPTS, 1998b, pp. 1).

Currently, there are 19 certification fields, each with specific standards and performance-based assessments. The standards incorporate the skills that not only address what teachers do in their classrooms, but also emphasize other practices outside the classroom. Such practices include teachers' collaboration with other stakeholders in education, their continued professional development and reflective practice, and their continued contributions to their profession through the provision of other professional services.

Purpose of the Study

The purpose of this study was to investigate the effects of the National Board Certification Pilot Project in Iowa. Initiated in 1998, the Project provides monetary incentives for teacher certification, reimbursement for registration fees, and a support program for teachers pursuing certification. The primary questions guiding this evaluation were determined by the Iowa State Legislature. They follow:

1) What are the effects of the National Board Certification Pilot Project on teachers' professional development?
2) What are the effects of the National Board Certification Pilot Project on teachers' provision of professional services to school districts?
3) What are the effects of the National Board Certification Pilot Project on teacher induction and retention in Iowa? and
4) What are the effects of the National Board Certification Pilot Project on teaching quality?

To address these four questions, surveys were created to:

1) examine teacher group differences based on certification status;
2) gather perceptions that teachers have about the effects of certification after they have been involved in the process; and
3) gather perceptions of principals who have teachers in their schools who participated in certification.

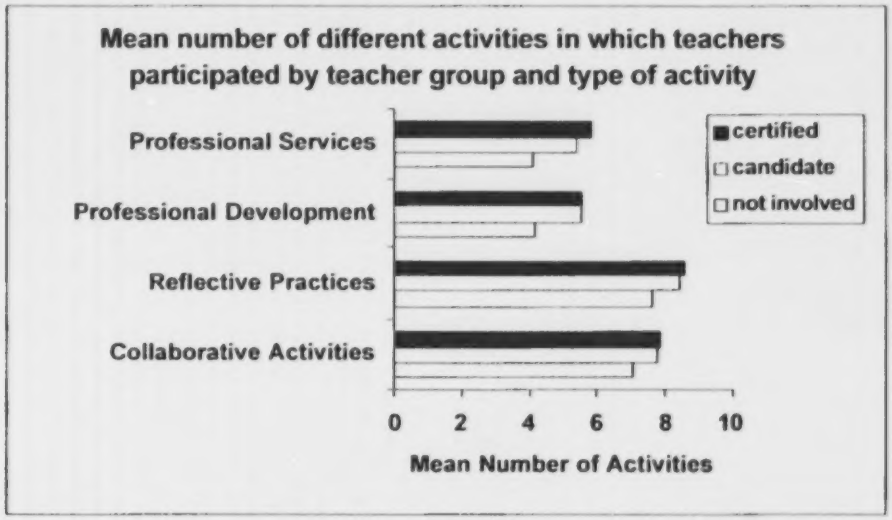
As stated in the NBPTS mission, improving student learning is a central goal of certification. However, this study did not incorporate student learning as an evaluative factor because the Legislature did not specifically request this information and because of the short time frame and limited available resources. While not measuring student learning directly, this study does examine several variables linked to student learning including teacher professional development, classroom teaching practices, reflective practice, and collaboration with other stakeholders in education. These same variables also are relevant to comprehensive school improvement.

Design of the Study

The design of the study employed a self-report survey which was sent to three groups of teachers: National Board Certified teachers, candidates or those teachers nearing completing of the certification process, and a stratified random sample of teachers who have not been involved in the certification process. Overall, 564 (55%) of the 1018 teachers surveyed responded. In addition, 287 principals of teachers who have been involved in certification also were surveyed and 134 (47%) responded.

General Findings

The general findings indicate that teachers who have been involved in National Board Certification in Iowa are more involved in professional development activities, and provide more professional services to their school districts. They also demonstrate significant differences in teaching quality when compared to teachers who have not been involved in the certification process. Teaching quality in this study was measured by: 1) teachers' use of various classroom teaching practices, 2) teachers' collaboration with others stakeholders in education, and 3) teachers' reflective practice.



Professional Development Results

Results indicate that surveyed certified teachers and candidates were involved in significantly more professional development activities than teachers not involved in certification. Specifically, they were more likely than teachers not involved in certification to have participated in a number of professional development activities including having had colleagues critique their teaching, observing other teachers teaching as part of their own professional development, being active in a professional organization(s), making presentations at professional meetings, attending state or national professional association meetings, and participating in professional development beyond licensure renewal requirements.

Professional Services Results

Surveyed certified teachers and candidates provided significantly more professional services to their school districts than teachers not involved in certification. They were more likely to have

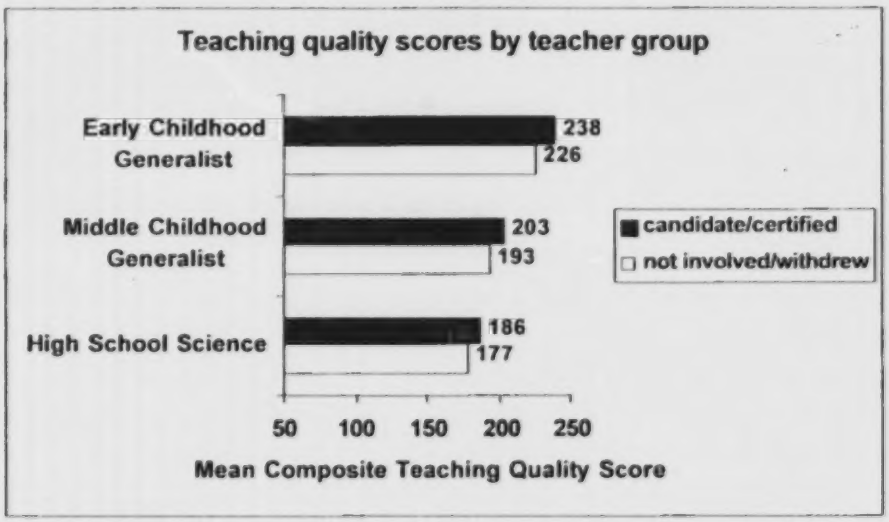
developed curricular materials for their department, conducted professional development activities for colleagues, critiqued the instructional approaches of their colleagues, served as a resource for their colleagues, presented demonstrations of successful teaching practices, served in a leadership capacity in their comprehensive school improvement plan, served on a school or district curriculum committee, and provided other professional services to their school or school district.

Induction and Retention Results

The teacher groups were mostly similar in terms of induction and retention in teaching. In general, teachers in this sample appear very committed to teaching in Iowa.

Teaching Quality Results

Where measured by classroom teaching practices, the extent of teaching quality varied across the three different subgroups of teachers who completed this section of the survey. More differences were seen between the certified/candidate teachers and those not involved in certification in the Early Childhood and Middle Childhood Generalists groups than the Adolescence/Young Adulthood Science group. These differences were seen between certified/candidates and uninvolved teachers on NBPTS standards that address the core classroom teaching practices. Differences seen in these two propositions suggest that certified/candidate teachers better understand how knowledge in their subjects is created, organized, and linked to other disciplines; command specialized knowledge of how to convey subjects; and generate multiple paths to knowledge compared to teachers not involved in certification. Further, the certified/candidate teachers more frequently use multiple methods to meet their teaching goals, use group learning, value student engagement, and assess student progress



compared to uninvolved teachers.

Collaboration Results

Results indicate that certified teachers and candidates are participating in significantly more collaborative activities than teachers not involved in certification. Specifically, higher percentages of certified teachers and candidates reported that they are collaborating with teachers outside their school district to improve student learning, as well as with educators from colleges, universities, or other institutions and agencies to improve student learning.

Reflective Practice Results

Certified teachers and candidates in this study also are participating in significantly more reflective practice activities than teachers not involved in certification. Higher percentages of surveyed certified teachers and candidates reported that they incorporated feedback from parents to evaluate and improve their teaching, incorporated recent research findings into their teaching, and used student work to assess their teaching.

Perceptions of the National Board Certification Process

Certified teachers and candidates near completion of the process rated the National Board Certification process very positively as a professional development experience with almost all respondents rating it as either excellent or good. Almost all also reported that they probably or definitely would recommend the National Board Certification process to their colleagues.

Consistent with the group differences described above, almost all teachers agreed or strongly agreed that since beginning the National Board Certification process, they have become better teachers. Almost all agreed that they have developed stronger curricula and improved ways to evaluate student learning and that they spend more time reflecting on their teaching and ways of improving it. Similarly, almost all teachers agreed that the levels of engagement in learning by their students and themselves have increased. At least two-thirds of respondents agreed or strongly agreed that they more often involve parents and other community members as resources to support their teaching practice, more easily connect their district's standards and benchmarks to their day-to-day teaching practice, and that their collaboration with other teachers is more focused on issues of teaching and student learning.

While the percentage of positive responses by responding principals was somewhat less than that of teachers, well over half agreed or strongly agreed that certified teachers at their school had improved their teaching in a number of specific ways, such as, developing stronger curricula and improved ways to evaluate student learning; increasing the level of engagement in learning by their students and themselves; enhancing the instructional strategies they use; and reflecting more on their teaching and ways of improving it.

More than half the principals believed that their teachers were better or more innovative because of the certification process; slightly less than half said the teachers were about the same. Almost 40% of the principals perceived that there was increased student learning in the classrooms of the National Board Certified teachers, while a third said they had not perceived this, and another 30% said they did not know.

Limitations

One limitation of this study is that causality cannot be inferred from it. Teachers who complete certification may be different from those who do not prior to participating in the process. Many of the results in this study suggest that change does occur during the process, however, as teachers who are candidates often score midway between certified teachers and those not involved in certification. As noted above, this type of design was selected because of the short time span provided for this study. A more thorough examination of the effects of National Board Certification would include a longitudinal design in order to examine changes in teachers' professional activities and teaching practices. It is also noteworthy that teachers, and principals to a lesser extent, perceived positive changes in their professional activities and teaching quality after they had been involved in National Board Certification.

Impact Study of the National Board Certification Pilot Project in Iowa, Spring 2001

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Impact Study of the National Board Certification Pilot Project in Iowa, Spring 2001

Introduction and Description of Project

National Board for Professional Teaching Standards

The National Board for Professional Teaching Standards (NBPTS), founded in 1987, is a private, nonprofit organization governed by a 63-member board of directors, the majority of whom are teachers. National Board Certification, developed by teachers and other education stakeholders, is a voluntary process and seeks to recognize experienced teachers for the quality of their practice. The mission of the National Board is:

- "to establish high and rigorous standards for what accomplished teachers should know and be able to do;
- to develop and operate a national voluntary system to assess and certify teachers who meet these standards; and
- to advance related education reforms for the purpose of improving student learning in American schools" (NBPTS, 1998b, pp. 1).

National Board Certification not only recognizes accomplished teachers, it "represents both an opportunity to rethink the way the profession organizes itself for the continuing growth and development of its members and a chance to design new ways to organize and manage schools to capitalize on the expertise of accomplished teachers" (NBPTS, 1998b, pp. 1). The NBPTS' policy statement *What Teachers Should Know and Be Able To Do* identifies five core propositions that describe accomplished teaching. The propositions are that:

1) Teachers are committed to students and their learning;
2) Teachers know the subjects they teach and how to teach those subjects to students;
3) Teachers are responsible for managing and monitoring student learning;
4) Teachers think systematically about their practice and learn from experience; and
5) Teachers are members of learning communities (NBPTS, 1998b, pp. 1).

These five propositions guide the development of the National Board's standards and performance-based assessments. Currently, there are 19 certification fields, each with specific standards and assessments, differentiated by grade level and content area taught. The standards "represent a professional consensus on the critical aspects of practice that characterize accomplished teachers" (NBPTS, 1998b, pp. 1) in a particular field. As such, they incorporate the "essential knowledge, skills, dispositions, and commitments that allow teachers to practice at a high level" (NBPTS, 1998b, pp. 1). These skills not only address what teachers do in their classrooms, but also emphasize other professional activities outside the classroom including teachers' collaboration with other stakeholders in education, their continued professional development and reflective practice, and their continued contributions to their profession through the provision of other professional services.

The process of achieving National Board Certification begins with three basic eligibility requirements: having a baccalaureate degree from an accredited institution, having three years of fulltime teaching experience at the K-12 level, and having a valid state teaching license for each of those three years if required by that state. Teachers then complete the performance-based

assessment process which is structured around two key activities: 1) the compilation of a portfolio of practice during the course of a school year; and 2) participation in one day of assessment center activities during the summer. Teachers' scores for the portfolios and assessment center are combined to determine if they have achieved National Board Certification. Candidates, those in the certification process, who fail to achieve certification on their first attempt have up to three years to retake exercises to raise their score.

National Board Certification Pilot Project in Iowa

Between 1992 and 1995, the University of Northern Iowa served as a Field Test Network Center for the NBPTS through a direct grant with them. Interest was generated within teaching groups representing the three certificate areas that were being field-tested and 13 Iowa teachers were certified through that process.

The National Board Certification Pilot Project in Iowa officially began in 1998 and was funded primarily by the Iowa legislature. The Iowa legislature offered $10,000 a year for five years as an incentive for teachers who achieved certification and federal and state funds were obtained to subsidize half of the $2,000 application fee for certification. In 1999, the Iowa legislature reduced the annual award to $5,000 per year for 10 years for the 157 teachers who were certified by November of 1999 and to $2,500 per year for 10 years for teachers who became certified thereafter. The state currently pays for half of the registration fee initially and reimburses the teachers for the other half upon proof of certification.

In 1998, the Iowa Department of Education also allocated funds from Goals 2000 for a program to support candidates in completing the certification process. The University of Northern Iowa, in conjunction with the Iowa State Education Association (ISEA) and the School Administrators of Iowa (SAI), was awarded the grant to develop this support program. Funding for this two-year (1998-2000) project resulted in the establishment and operation of the National Board Certification Candidate Support Project (now the Iowa Office for Staff Development). This program provides an interactive support system for candidates from pre- through post-candidacy using a number of strategies. First, 27 NBPTS certified teachers serve as trained mentors to assist the Director in providing necessary support at all levels of candidacy. The Iowa Communications Network (ICN), a Web page including videotapes and an assessment site simulation, a toll-free phone number and email are utilized as communication links. Additionally, a planned continuum of ICN and regional workshops provide support for candidates' portfolio development and preparation for the assessment center exercises. To date, Iowa has 263 National Board Certified teachers with 63% of its candidates achieving certification upon their first attempt, compared to less than 50% of teachers nationally. Iowa's, advanced candidates, those who did not achieve certification on their first attempt, have shown a 68% success rate upon their second attempt.

In 2000, the Iowa legislature approved the continuation of the Iowa Office for Staff Development through an unappropriated mandate for $200,000 in the UNI general budget. The support program has added pre-candidate workshops for interested teachers, increased mentoring assistance to cover twenty-seven ICN sites throughout the state and provided additional professional development for "advanced candidates" who attempted certification with second or third attempts.

Audiences

The primary audiences for this evaluation of the National Board Certification Pilot Project in Iowa are:

- Vickie Trent, director, Iowa Office for Staff Development, and affiliated staff;
- Iowa Department of Education; and
- Iowa State Legislature.

Evaluation Questions

The primary evaluation questions guiding this evaluation were determined by the Iowa State Legislature to be:

5) What are the effects of the National Board Certification Pilot Project on teachers' professional development?
6) What are the effects of the National Board Certification Pilot Project on teachers' provision of professional services to school districts?
7) What are the effects of the National Board Certification Pilot Project on teacher induction and retention in Iowa? and
8) What are the effects of the National Board Certification Pilot Project on teaching quality?

Teacher Survey Methods

Teacher Survey Sample

In Spring 2001, a sample of 1,018 K-12 teachers in Iowa was selected to participate in this study. Two major groups of teachers were included: 448 teachers who have been involved in the National Board Certification (NBC) process since its beginning in 1994 (NBC teachers—including certified teachers, candidates, and teachers who began but withdrew from the process), and a stratified random sample of teachers who have not been involved in certification (comparison teachers). The comparison group was stratified by teaching assignment to match the characteristics of the NBC teacher group. Comparison group teachers were also required to have at least three years of teaching experience, as this is a prerequisite of teachers pursuing National Board Certification. Overall, 55% of teachers surveyed responded (171/244 certified teachers, 137/204 candidates or teachers who withdrew, and 240/570 comparison group teachers). Sixteen additional individuals did not provide information regarding certification status (Table A1 in Appendix A provides a complete list of the number of teachers in each of the certification categories). Five hundred sixty-four teachers responded to the survey and 561 comprised the final data set. Teachers were omitted from the final data set if they were not currently teaching or if they had a large number of missing values.

The survey and a self-addressed envelope were mailed to teachers in March and April, 2001. Four different surveys were sent to different subsets of the teacher groups described above (see Description of Teacher Survey). Table 1 shows the number of teachers sampled, the number who responded, and the response rate for each of the two main teacher groups by type of survey.

Table 1. Number of teachers sampled and response rate by type of survey and teacher group.

Survey & Teacher Group	# Sampled	# Returned	Response Rate
General Teacher Survey	**535**	**318**	**59%**
NBC teachers*	242	189	78%
Comparison teachers	293	122	42%
Early Childhood/Generalist Survey	**205**	**102**	**50%**
NBC teachers	89	48	54%
Comparison teachers	116	52	45%
Middle Childhood/Generalist Survey	**194**	**101**	**52%**
NBC teachers	83	52	63%
Comparison teachers	111	44	40%
Adolescence & Young Adulthood/Science Survey	**84**	**43**	**51%**
NBC teachers	34	19	56%
Comparison teachers	50	22	44%
Total	**1018**	**564**	**55%**
NBC teachers	448	308	69%
Comparison teachers	570	240	42%

*NBC teachers include certified teachers, candidates, and teachers who began certification but withdrew.

Description of Teacher Survey

Four separate teacher surveys were created to assess differences between teachers who have been involved in the National Board Certification process and those who have not been involved (see Appendix B for all survey instruments). All four surveys address the first three questions posed by the Iowa State Legislature: namely, what are the effects of the National Board Certification Pilot Project on teachers' professional development, teachers' provision of professional services to school districts, and teacher induction and retention in Iowa? The fourth question—what are the effects of the National Board Certification Pilot Project on teaching quality—was addressed by three "extended" surveys sent to teachers with specific teaching assignments. The three subgroups were selected to ensure that comparisons of teachers' classroom teaching practices were made with fairly homogeneous groups of teachers. Some of the survey items parallel those from published materials such as National Center for Education Statistics' *What Happens in Classrooms? Instructional Practices in Elementary and Secondary Schools, 1994-95*. Most of the items, however, were based on the National Board for Professional Teaching Standards' published materials.

General Teacher Survey

A general teacher survey was sent to roughly half the sample. Teachers received this survey if they were not an Early Childhood Generalist (K-3 self-contained classroom teacher), Middle Childhood Generalist (self-contained classroom teacher in grades 4-6), or Middle/High

School Science teacher. The major sections of this survey include: teacher demographics (e.g., years of teaching experience, age, educational attainment, gender); school support; collaboration; reflective practices; professional development, provision of professional services; teacher retention; and perceptions of the certification process and its effects.

Early Childhood Generalist, Middle Childhood Generalist, and Middle/High School Science Teacher Surveys

Teachers who were Early Childhood Generalists, Middle Childhood Generalists, or Middle/High School Science teachers received not only the contents of the general teacher survey, but an additional section that examined teaching quality. Teaching quality items were based on the five major propositions identified in the National Board for Professional Teaching Standards.

Teacher Survey Results

Teacher Survey Analyses

Throughout the analyses, teachers who began the certification process but withdrew were grouped with teachers who had not been involved in the certification process. This was done because the sample size for this group was small (n=17) and because their experience with certification was more similar to teachers uninvolved than to candidates who were nearing completion of the process, or certified teachers.

Where appropriate, statistical tests of significance were conducted. Analysis of variance (ANOVA) and two-tailed chi-square tests were used to examine differences between the three teacher groups (certified, candidates, and not involved in certification). Analysis of covariance (ANCOVA) was also used to examine differences when the necessity to control for relevant demographic variables, such as educational attainment, existed. If a relationship is reported as significant, this means the probability of occurrence by chance is less than one in twenty. If a relationship is reported as approaching statistical significance, it means the probability of occurrence by chance is less than one in ten.

Reliabilities of Teacher Survey

A Cronbach's Alpha reliability coefficient was computed for each of the scales (school support, collaboration, reflective practice, professional development, professional services, and teaching quality). This coefficient provides an estimate of the scale's internal consistency. Table A1 in Appendix A lists which items are included each scale. Tables A3 and A4 in Appendix A shows the Cronbach's Alpha for each of the scales. A reliability above .70 is generally considered sufficient in this type of situation, however, scales with fewer items tend to have lower alpha levels.

Demographics

A number of demographics questions were included to gain a better understanding of the characteristics of the sample, and to examine whether differences between teacher groups on relevant "context" variables, such as amount of teaching experience, were also related to differences between groups on variables of interest. Most of the respondents (80%) were female though certified teachers and candidates were more likely to be female than were teachers uninvolved in certification (85% and 86% vs. 74%, respectively). The average age of teachers in this sample was 45.5 (median=47). There were significant differences across the three teacher

groups with candidates being younger than certified and uninvolved teachers (Mean=43.3 vs. 46.5 and 45.8 years, respectively). Again, because age did not correlate with any of the variables this difference between teacher groups was not a concern.

The average years of teaching experience was 19 years, ranging from 1-41. The sampling plan specified that all teachers have at least three years of experience and all but three teachers in the sample met this criterion. Certified teachers' average years of teaching experience was significantly higher than that of candidates (see Figure 1). Because years of teaching experience did not correlate with any of the variables of interest, the statistical difference between teacher groups on years of teaching experience was not a concern.

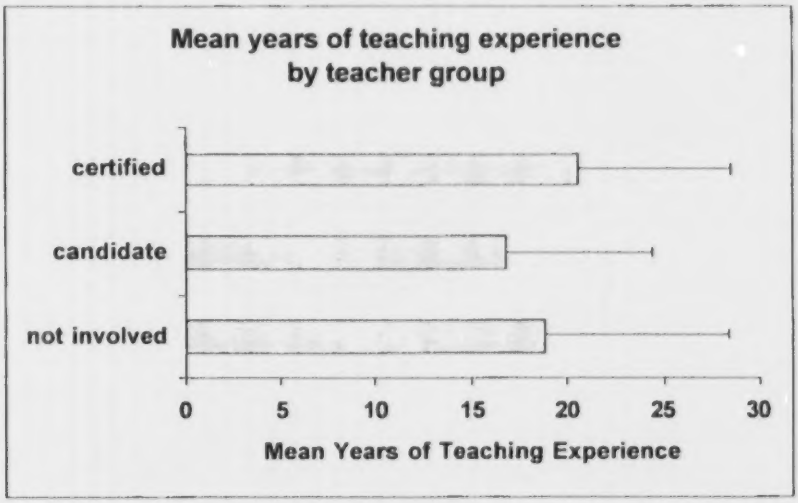


Figure 1.

Teachers were asked to identify what the main subject area they taught was and were given 11 categories from which to choose. As Table 2 shows, the largest percentage of teachers (30%) were self-contained classroom teachers, followed by English/language arts (23%), science (14%), and mathematics (9%) teachers. Similar percentages of teachers in the three teacher groups taught self-contained classrooms and English/language arts. Relatively higher percentages of candidates were career and technical and exceptional needs teachers, while lower percentages of them taught science, art and social studies/history compared to the other two teacher groups. A higher percentage of certified teachers also taught mathematics.

Because of differences between the three teacher groups in terms of their main subject area taught, this variable was examined in subsequent analyses. No significant interactions between this variable and certification status were found in the main analyses that follow, indicating that the results do not vary by subject area taught. Consequently, the data are aggregated across main subject areas taught in all subsequent results.

Table 2. Number and percent of respondents by teacher group and main subject currently teaching.

Main Subject Currently Teaching	Teacher Group			
	Not Involved	Candidate	Certified	Total
Mathematics	8% n=20	7% n=8	14% n=23	9% n=51
Science	16% n=40	8% n=10	15% n-26	14% n=76
Art	6% n=15	3% n=4	9% n=15	6% n=34
Music	2% n=5	1% n=1	0% n=0	1% n=6
Physical Education	2% n=4	2% n=2	1% n=1	1% n=7
Self-contained Class	30% n=76	30% n=36	29% n=49	30% n=161
Social Studies/History	7% n=18	3% n=4	7% n=11	6% n=33
Career & Technical	3% n=7	8% n=10	1% n=2	4% n=19
English/Language Arts	23% n=59	23% n=28	22% n=37	23% n=124
Exceptional Needs	1% n=3	11% n=13	1% n=1	3% n=17
Other	4% n=9	3% n=4	2% n=4	3% n=17
Total	47% n=256	22% n=120	31% n=169	n=545

Teachers were also asked to indicate which grade levels they currently taught. As Figure 2 shows, slightly less than half the teachers taught only one grade level while 42% taught between two and four grade levels. Kindergarten through 6th grade teachers taught single grade levels more so than other teachers. Individuals who taught nine to 13 levels tended to be specialists. Because there were so many different combinations of grade levels taught, a precise and exhaustive summary is not presented. Figure 3 shows, in a general sense, what percentage of respondents taught multiple grade levels in four main categories: early elementary (preschool through 3rd grade), upper elementary (grades 4-6), middle level (grades 7-8), and high school (grades 9-12). As Figure 3 indicates, the distribution across these grade level groups was fairly uniform with the exception of middle level in which fewer teachers are represented. It should be noted that some overlap does exist in these percentages, as Figure 2 shows that 12% of the sample taught between five and 12 different grade levels.

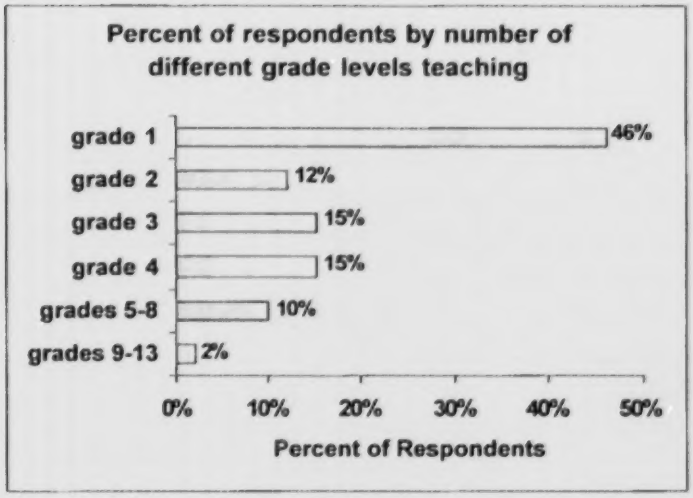


Figure 2.

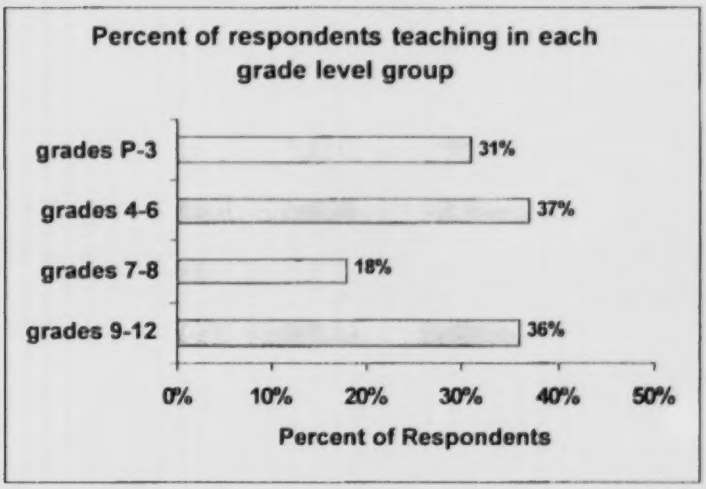


Figure 3.

Several demographics questions dealt with teachers' educational background and membership in professional organizations. Table 3 shows the percentage of teachers in each teacher group who responded "yes" to each of the demographics questions asked. Overall, more than half (57%) the teachers reported having a master's degree. Certified teachers were more likely to report having a master's degree and teachers not involved in certification were less likely to have one. Having a master's degree was significantly correlated with respondents' scores on several of the variables of interest so this demographic variable was controlled for in subsequent analyses. Only 2% of respondents reported having a doctorate and as Table 3 shows, certified teachers were more likely to have one compared to the other two teacher groups. Most respondents (87%) reported that they belonged to at least one professional organization. Again,

certified teachers were more likely to report that they belonged to one than teachers not involved in certification.

Table 3. Percent of respondents by teacher group who answered "yes" to questions regarding educational attainment and membership in professional organizations.

Teacher Group	Has a master's degree	Has a doctorate	Belongs to a professional organization
Not involved	45%	0.4%	84%
Candidate	58%	2%	90%
Certified	74%	5%	92%
Total	57%	2%	87%

Teachers' school support was also measured to ensure that differences in this dimension did not account for other differences between the three teacher groups. Teachers were asked to rate their agreement with statements about how their school administrators, coworkers, and parents support their teaching effectiveness and professional development. As Figure 4 shows, there was no difference across the three teacher groups in terms of their perceptions of their school support.

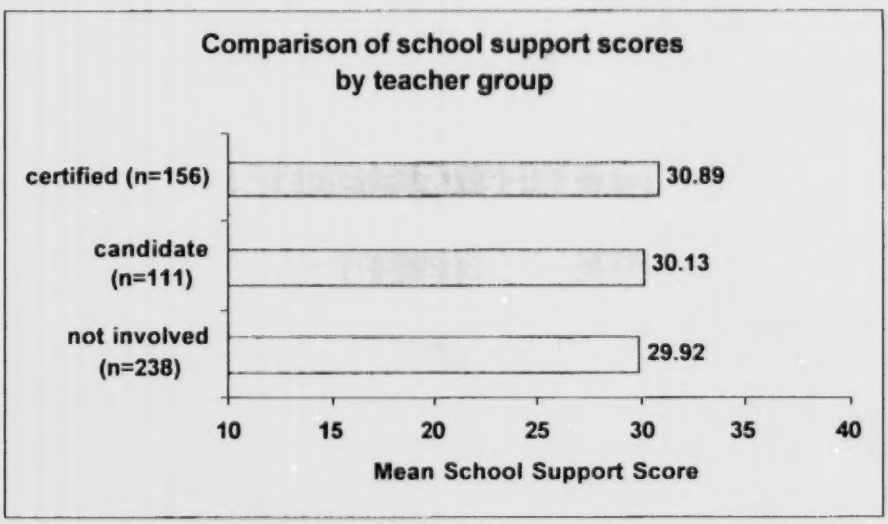
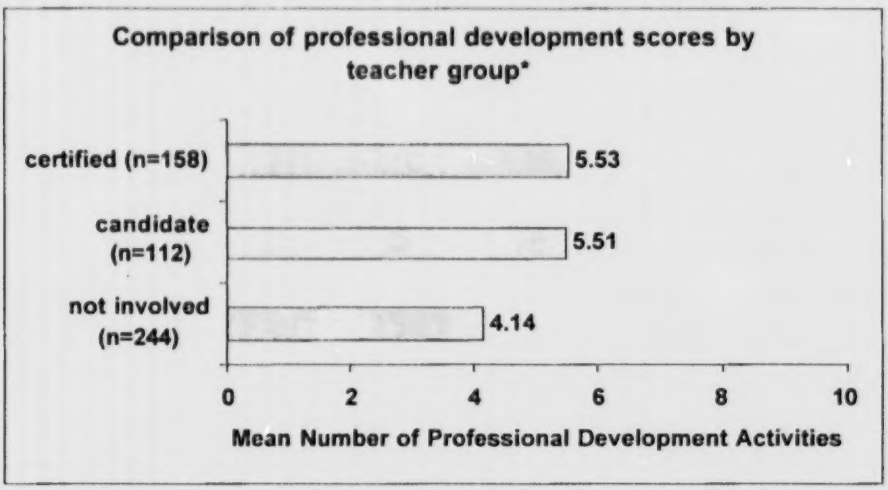


Figure 4.

Professional Development

Teachers' involvement in professional development activities was assessed with 11 items describing a range of common professional development activities. These activities were identified in the NBPTS as well as other national surveys such as the *2000 National Survey of Science and Mathematics Education Science Questionnaire*. Teachers were asked to report whether or not they participated in each activity during the previous 12 months. Their responses to these 11 items were then summed to create a scale score indicating the total number of activities in which they participated. Figure 5 shows the mean number of different professional development activities in which teachers reported participating by teacher group. Certified teachers and candidates reported participating in significantly more activities than teachers not involved in certification.



*The difference between certified teachers/candidates and teachers not involved in certification is statistically significant.

Figure 5.

As Table 4 shows, compared to teachers not involved in certification, higher percentages of certified teachers and candidates reported that they:

- Had colleagues critique their teaching.
- Observed other teachers teaching as part of their own professional development.
- Were active in a professional organization(s).
- Made presentations at professional meetings.
- Attended a state or national professional association meeting.
- Participated in professional development beyond licensure renewal requirements.

Certified teachers were more likely than the other two teacher groups to have:

- Published in professional journals.

The three teacher groups were similar in the percentages reporting that they:

- Attended AEA-sponsored professional development activities/workshops.

- Participated in individual or collaborative research on a topic of interest to them professionally.
- Were mentored by another teacher in a formal relationship.
- Did graduate degree work relevant to their teaching.

Lower percentages of certified teachers reported participating in two of the activities listed. First, they were less likely to report participating in graduate degree work. This is not surprising given that significantly higher percentages of them had earned master's degrees and doctorates compared to the other two teacher groups. Secondly, lower percentages attended AEA-sponsored professional development activities/workshops. This may be related to differences in educational attainment as respondents overall with a master's degree were less likely to attend this type of professional development.

Table 4. Percent of respondents by teacher group who reported participating in each professional development activity during the past 12 months.

Professional Development Activities During the Past 12 Months	Not Involved	Candidate	Certified
Had colleagues critique my teaching.*	27% n=68	58% n=70	50% n=84
Observed other teachers teaching as part of my own professional development.*	31% n=78	46% n=55	50% n=85
Attended AEA-sponsored professional development activities/workshops.	78% n=201	76% n=91	72% n=121
Was active in a professional organization(s).*	53% n=135	67% n=79	73% n=122
Participated in individual or collaborative research on a topic of interest to me professionally.	43% n=108	53% n=63	52% n=88
Made presentations at professional meetings.*	24% n=60	47% n=56	54% n=91
Attended a state or national professional association meeting.+	32% n=82	47% n=56	61% n=103
Participated in professional development beyond licensure renewal requirements.+	72% n=183	96% n=114	86% n=146
Was mentored by another teacher in a formal relationship.	9% n=24	15% n=17	11% n=18
Did graduate degree work relevant to my teaching.	51% n=129	51% n=60	42% n=70
Published in professional journals.^	2% n=4	3% n=4	11% n=19

*The difference between certified/candidate teachers and teachers uninvolved in certification is statistically significant.

+All three teacher groups are significantly different from one another.

^Certified teachers differed significantly from candidates and teachers uninvolved in certification.

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If teachers indicated that they had participated in a professional development activity, they were then asked to indicate how often they did so during the previous 12 months and were given three response options: 1-2 times, 3-9 times, or 10 or more times. It should be noted that not all activities were included in this list as some were not appropriate for this scale. As Table A5 in Appendix A shows, there were few differences across teacher groups in terms of the number of times they participated in each activity. Differences in the frequency of participation across teacher groups were seen in only two activities:

- Candidates reported having colleagues critique their teaching significantly more often than certified teachers and those not involved in certification;
- Candidates reported participating in individual or collaborative research on a topic of interest to them professionally significantly more often than certified teachers. Teachers uninvolved in certification did not differ from the other two groups in the frequency of this activity.

Teachers were also asked how the professional development activities they participated in had affected their teaching. They responded on a five-point scale from harmed a lot to improved a lot. About half the teachers reported that these activities had improved their teaching somewhat (see Figure 6). Roughly half of the certified teachers and candidates reported that they had improved their teaching a lot. Teachers who had not been involved in certification were less likely to report that these activities had improved their teaching a lot and were more likely to report that they had no effect compared to certified teachers and candidates. None of the respondents reported that the activities had harmed their teaching a lot or somewhat.

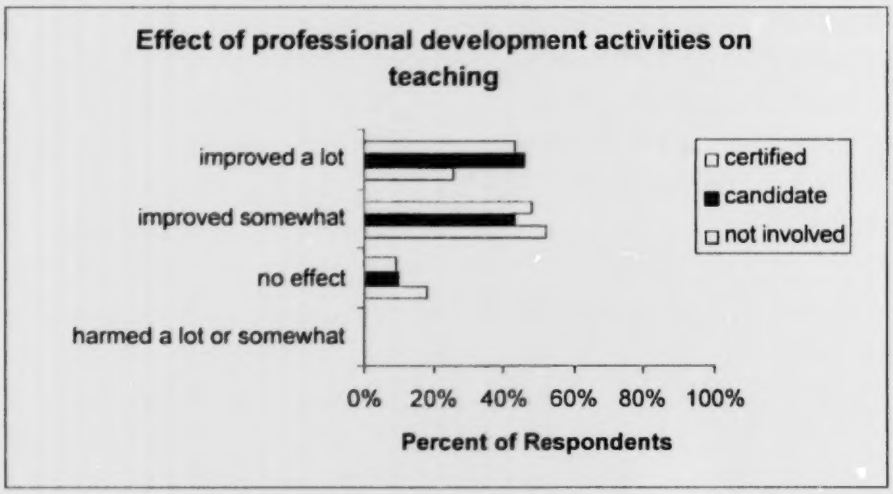


Figure 6.

A similar pattern of results was seen when teachers were asked how their professional development activities had affected their students' learning: roughly half said the activities had improved their students' learning somewhat; teachers who had not been involved in certification were less likely to report that these activities had improved their students' learning a lot and were

more likely to report that they had no effect compared to certified teachers and candidates (see Figure 7).

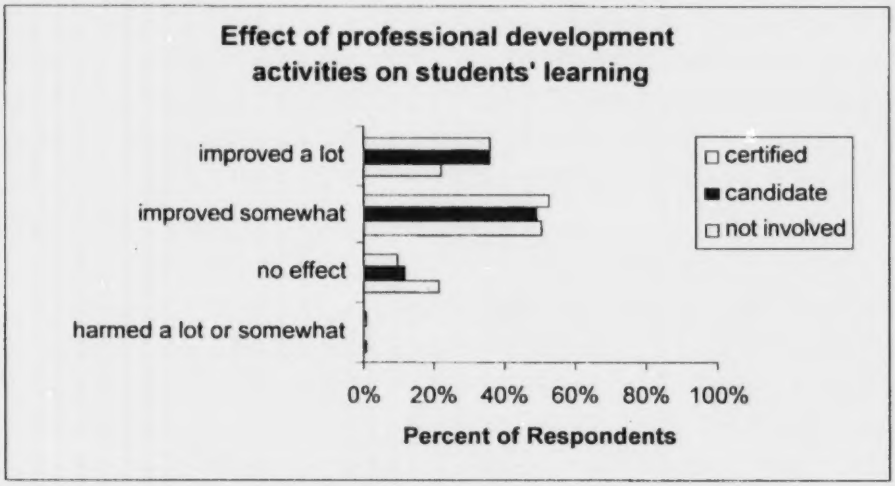
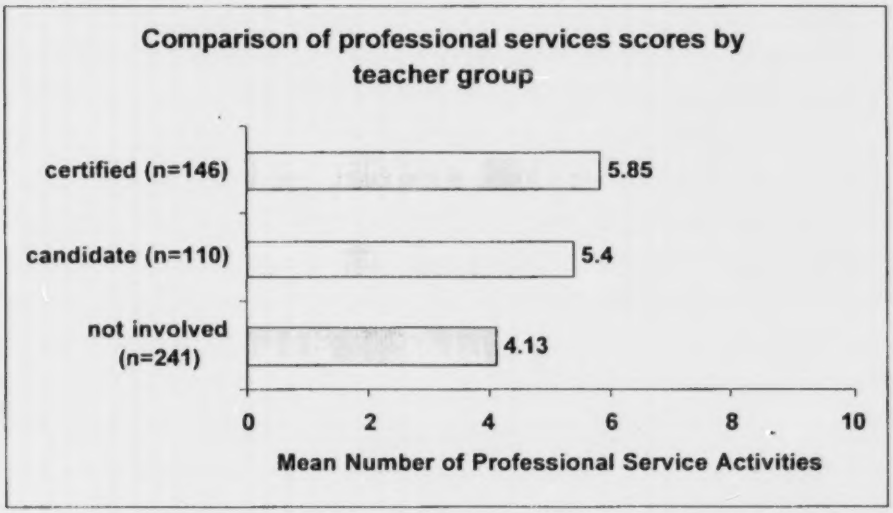


Figure 7.

Provision of Professional Services to School Districts

Teachers' provision of professional services to their school districts was assessed with 11 items describing a wide range of professional services. These services were identified in the NBPTS as well as other national surveys such as the *2000 National Survey of Science and Mathematics Education Science Questionnaire*. Teachers were asked to report whether or not they participated in each activity during the previous 12 months. Their responses to these 11 items were then summed to create a scale score indicating the total number of different activities in which they participated. Figure 8 shows the mean number of different professional service activities in which teachers reported participating by teacher group. Results showed that certified teachers reported participating in significantly more activities than teachers not involved in certification. Candidates' report of the number of activities was not different from those of certified or uninvolved teachers.



*The difference between certified teachers and teachers not involved in certification is statistically significant. New candidates' scores were not different from certified or uninvolved teachers' scores.

Figure 8.

As Table 5 shows, compared to teachers not involved in certification, higher percentages of certified teachers and candidates reported that they:

- Developed curricular materials for their department;
- Conducted professional development activities for colleagues;
- Critiqued the instructional approaches of their colleagues;
- Served as a resource for their colleagues;
- Presented demonstrations of successful teaching practices;
- Served in a leadership capacity in their comprehensive school improvement plan;
- Served on a school or district curriculum committee; and
- Provided *other* professional services to their school or school district.

Certified teachers were more likely than the other two groups to have:

- Received local, state, or national grants for teaching.

The three teacher groups were similar in the percentages reporting that they:

- Mentored a beginning teacher in a formal relationship; and
- Mentored a student teacher in a formal relationship.

Table 5. Percent of respondents by National Board Certification status who reported participating in each professional service activity during the past 12 months.

Professional Service Activities During the Past 12 Months	Not Involved	Candidate	Certified
Developed curricular materials for my department.*	70% n=180	83% n=99	86% n=146
Conducted professional development activities for colleagues.*	29% n=75	53% n=63	61% n=104
Critiqued the instructional approaches of my colleagues.+	13% n=34	28% n=33	40% n=68
Served as a resource for my colleagues.*	77% n=198	92% n=110	92% n=157
Presented demonstrations of successful teaching practices.*	26% n=65	43% n=52	43% n=72
Mentored a beginning teacher in a formal relationship.	26% n=67	29% n=34	36% n=60
Mentored a student teacher in a formal relationship.	36% n=92	42% n=50	43% n=70
Served in a leadership capacity in our comprehensive school improvement plan.*	32% n=83	49% n=58	54% n=90
Received local, state, or national grants for teaching.^	15% n=37	18% n=21	28% n=46
Served on a school or district curriculum committee.*	60% n=150	72% n=85	74% n=120
Provided *other* professional services to my school or school district.*	26% n=65	41% n=47	45% n=71

*The difference between certified/candidate teachers and teachers uninvolved in certification is statistically significant.

+All three teacher groups are significantly different from one another.

^Certified teachers differed significantly from candidates and teachers uninvolved in certification.

If teachers indicated that they had participated in a professional service activity during the past 12 months, they were then asked to indicate how often they did so and were given three response options: 1-2 times, 3-9 times, or 10 or more times. It should be noted that not all activities were included in this list as some were not appropriate for this scale. As Table A6 in Appendix A shows, differences in the frequency of participation across teacher groups were seen in only two of the six activities listed:

- Candidates reported that they developed curricular materials for their department significantly more frequently than certified teachers and those not involved in certification.
- Candidates and certified teachers reported that they served as a resource for their colleagues significantly more often than teachers not involved in certification.

About a third of teachers (n=185) reported that they provided other professional services to their school district as well. Of these, 73% gave open-ended responses describing what they did. Responses varied widely with 18% reporting that they worked on school or district improvement, 13% providing services related to technology, and 10% mentoring other teachers. Less than 10% of teachers provided other responses, such as, extra teaching assignments, text or policy writing, and TAG programs.

Teachers were also asked how the professional service activities they participated in had affected their teaching. They responded on a five-point scale from harmed a lot to improved a lot. About half the teachers reported that these activities had improved their teaching somewhat (see Figure 9). About a third of the certified teachers and candidates reported that they had improved their teaching a lot. Teachers who had not been involved in certification were less likely to report that these activities had improved their teaching a lot and were more likely to report that they had no effect compared to certified teachers and candidates. Almost none of the respondents reported that the activities had harmed their teaching a lot or somewhat.

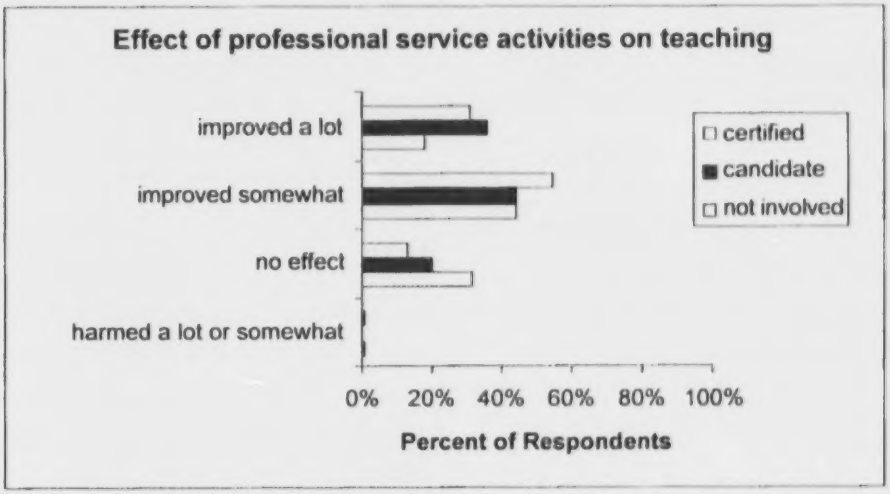


Figure 9.

A similar pattern of results was seen when teachers were asked how their professional service activities had affected their students' learning: roughly half said the activities had improved their students' learning somewhat; teachers who had not been involved in certification were less likely to report that these activities had improved their students' learning a lot and were more likely to report that they had no effect compared to certified teachers and candidates (see Figure 10).

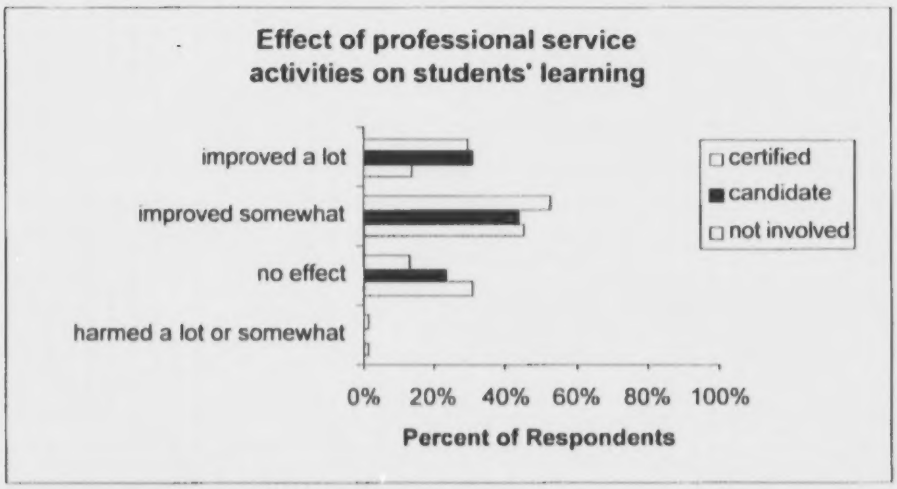


Figure 10.

Teacher Induction and Retention in Iowa

In this section of the survey, teachers were first asked how many more years they planned to be in teaching. Responses ranged from 0-40 years with a mean of 12 years (median=10 years). Only 3% of respondents said they planned to discontinue teaching at the end of the school year. One-fourth of respondents reported that they planned to continue teaching for five or less years, about a third said they would continue for 6-10 years, approximately 20% reported 11-15 years more teaching, and about 25% said they planned to teach for 16 or more years (see Figure 11). The responses of the three teacher groups were then compared, while controlling for age, which was significantly and negatively correlated with the number of years teachers planned to continue teaching. Results indicated that the mean number of years candidates' reported they planned to continue teaching was significantly more than certified teachers and those not involved in certification (see Figure 12).

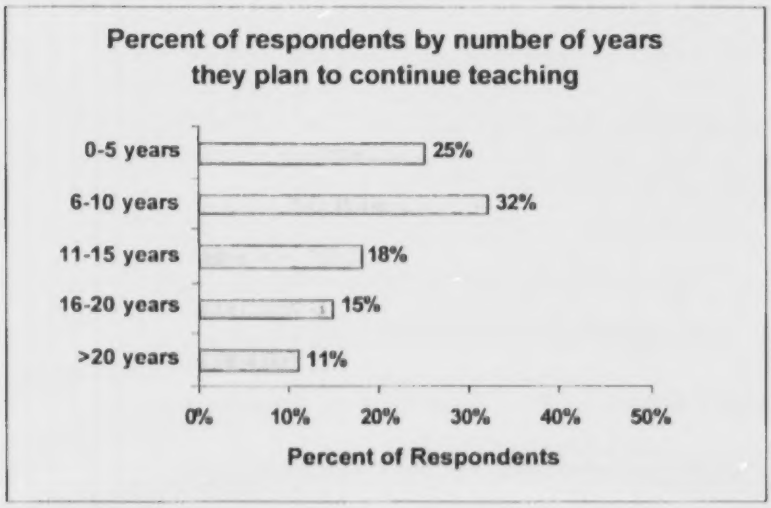


Figure 11.

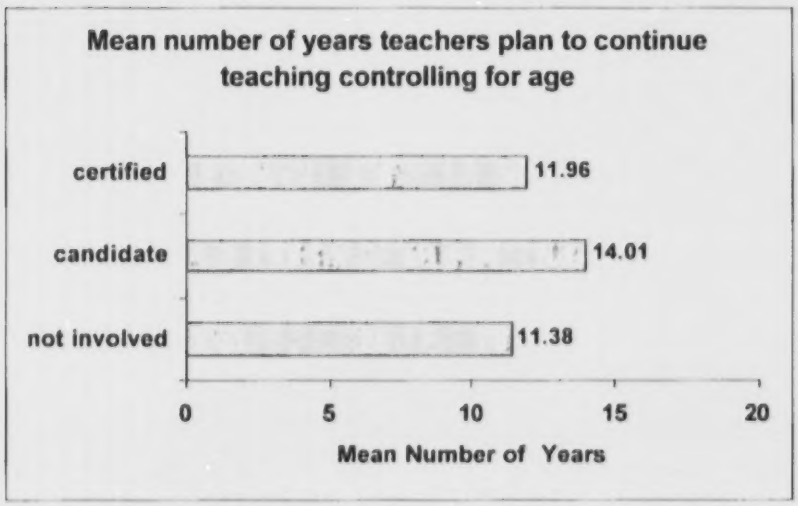


Figure 12.

Teachers were then asked how long they planned to continue classroom teaching and given six response categories of which they were to choose one. The response categories were ones used in the *Teacher Follow-up Survey Questionnaire for Current Teachers 1994-1995* (National Center for Education Statistics, 1999b). Overall, 62% of respondents reported they planned to continue teaching until they were eligible for retirement or as long as they were physically able. Roughly 20% were undecided, and less than 10% each said they would continue teaching until they could move into a non-teaching position within education, would probably continue unless something better came along, or definitely planned to leave teaching as soon as they could. Figure 13 shows the percent of respondents by teacher group who selected each response category. Results appear similar across the three teacher groups although there were

some significant differences. Candidates were more likely to report that they would continue teaching until physically able and teachers not involved in the certification process were less likely to select this option. Though the percentages were quite small, teachers not involved in certification were also more likely to report that they definitely planned to leave teaching (5% vs. 2%).

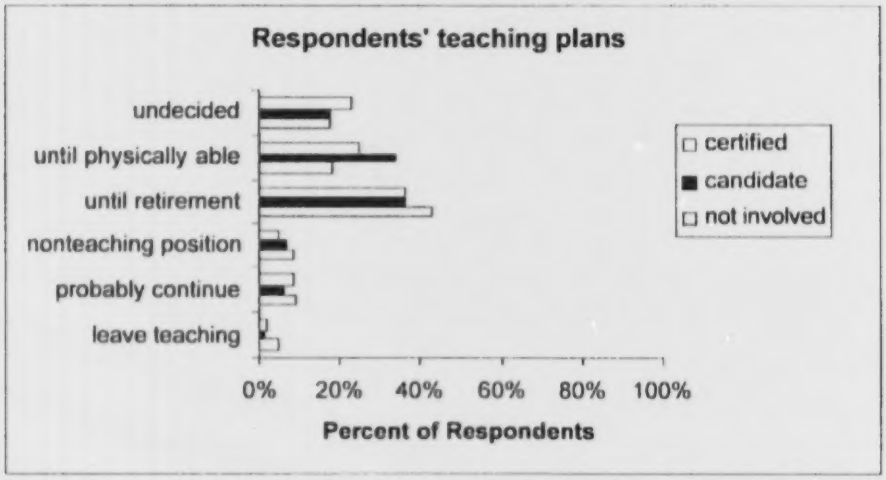


Figure 13.

When asked how likely they were to move to a different state to teach, almost all teachers (82%) said it was unlikely or very unlikely. Less than 10% reported it was likely or very likely, 7% said it was as likely as not, and 4% were unsure if they would move to a different state to teach. Figure 14 shows the percent of respondents who selected each response by teacher group. There were no significant differences between the three teacher groups in their responses to this question.

Teachers were also asked to explain why they were likely or unlikely to move to another state to teach. About a third (n=22) of the teachers who said it was likely or very likely that they would move to another state to teach gave open-ended responses as to why they would. Well over half (59%) said it was likely because of better pay, while less than 15% each reported that it was due to personal reasons, such as their spouse's job or because they had family elsewhere. Less than 10% each said it was because of workload, climate, or other opportunities.

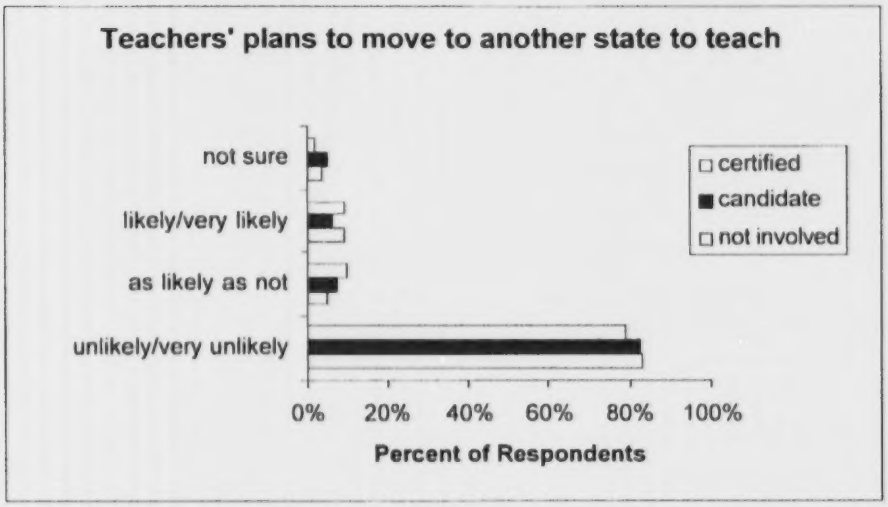


Figure 14.

Teachers were also asked how likely they were to leave teaching for another career. More than two-thirds (70%) reported that it was unlikely or very unlikely that they would leave teaching for another career, 12% said it was likely or very likely, 13% reported it was as likely as not, and 5% were not sure. Figure 15 shows the percent of respondents who selected each response by teacher group. There were no significant differences between the three teacher groups in their responses to this question.

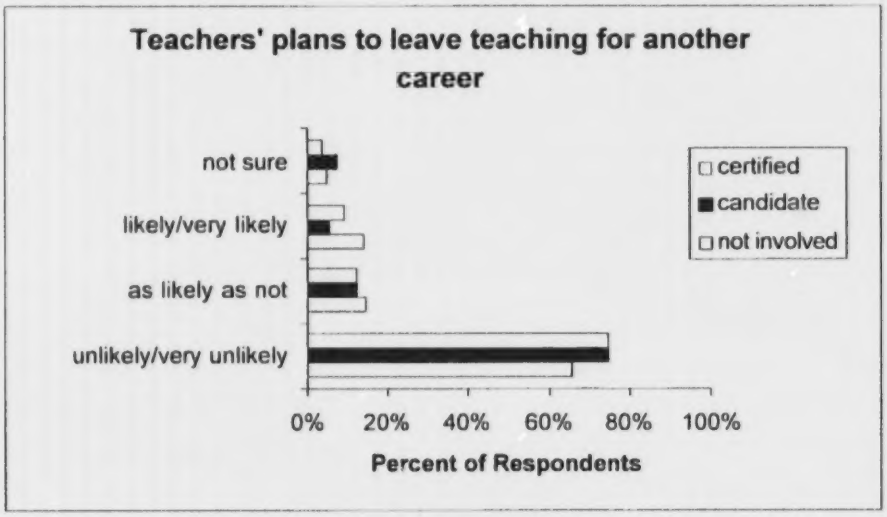


Figure 15.

Finally, teachers were asked to identify the five most effective steps that could be taken to encourage teachers to remain in teaching from among 16 options. The 16 options were taken from the *Teacher Follow-up Survey Questionnaire for Current Teachers 1994-1995* (National Center for Education Statistics, 1999b), and were broadly categorized into three groups: salaries/benefits/advancement, work load, and school support. The five most commonly identified steps came from all three major categories. As Figure 16 shows, almost all teachers identified higher salaries as one of the five most effective steps and more than half identified decreased class size. More effective student discipline, better fringe benefits and reduced workload were all identified by at least 40% of respondents. At least 30% also identified reduced paperwork, more support for new teachers, and improved opportunity for professional development. Twenty percent or more identified improved opportunity for professional advancement, better resources/materials for classroom use, and more authority for teachers in the school/classroom. Fewer percentages of teachers identified increased parent involvement, special recognition/assignments for excellent teachers, performance-based pay/incentives, increased standards for student academic performance, and safer schools as effective steps that could be taken to encourage teachers to remain in teaching. Teachers who were likely to leave Iowa to teach elsewhere or change careers gave similar responses to this question as teachers unlikely to move or change careers.

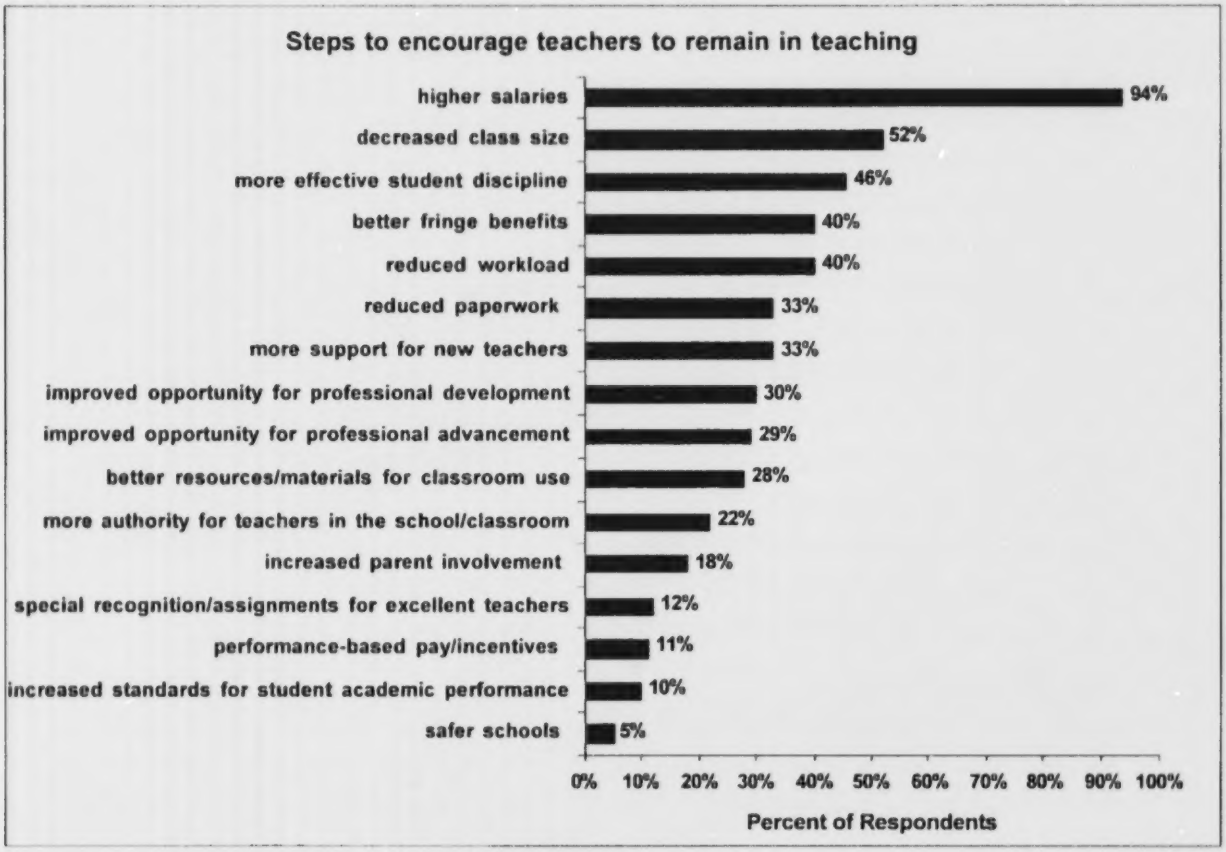


Figure 16.

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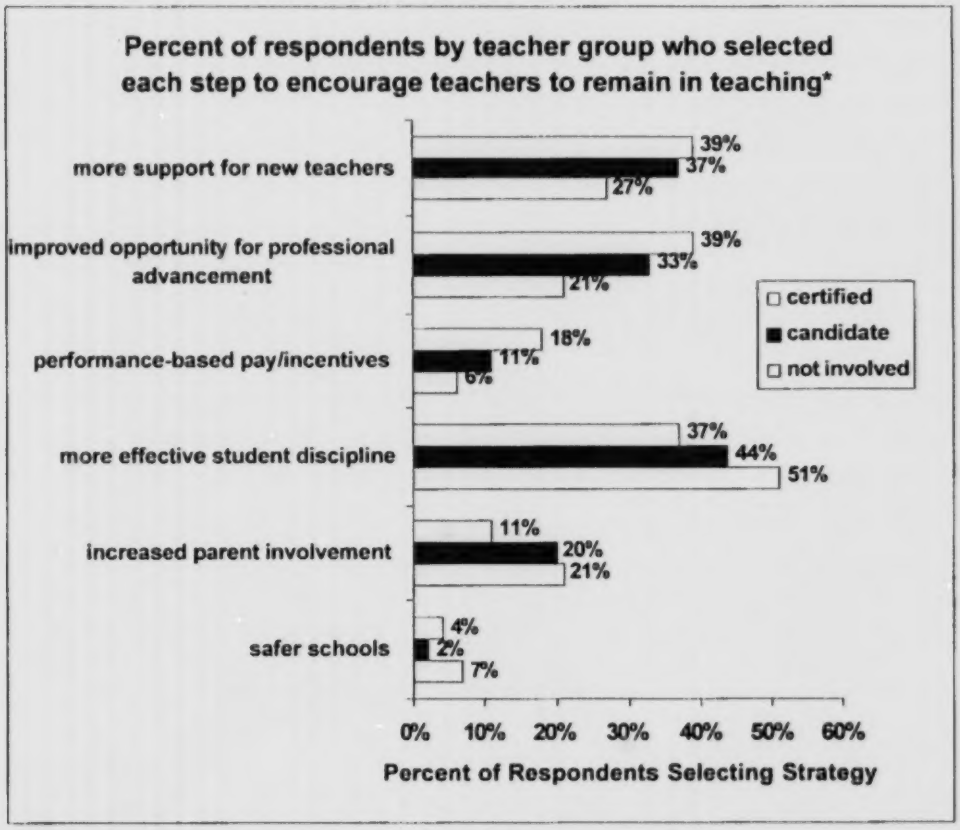
In six of the 16 steps presented to retain teachers, there were significant differences in the percent of respondents in each teacher group selecting that step (see Figure 17). Certified teachers were more likely to identify more support for new teachers and performance-based pay/incentives as one of the top five steps to retain teachers compared to teachers not involved in certification. Both certified teachers and candidates were more likely to say improved opportunity for professional advancement was important compared to uninvolved teachers. Conversely, teachers not involved in certification were more likely to select increased parent involvement and more effective student discipline as one of the top five steps to retain teachers compared to certified teachers. Compared to candidates, uninvolved teachers were also more likely so say that safer schools is an important step.



*Differences between teacher groups are statistically significant.

Figure 17.

A marginally significant difference across the teacher groups also was seen with higher percentages of certified and candidates identifying special recognition/assignments for excellent teachers as an important step compared to teachers uninvolved in certification. Larger percentages of uninvolved teachers selected better resources/materials for classroom use, reduced workload, and better fringe benefits as one of their top five steps compared to certified teachers and candidates.

Teachers were also asked to describe other steps that could be taken to encourage teachers to remain in teaching. About 42% (n=233) provided open-ended responses to this question. Many of the steps were redundant with those presented above, however, the most commonly cited new step was more respect for teachers and being treated as professionals (21%). Almost 10% each also cited support from principals/administration and mentoring support for teachers.

Teaching Quality

Teaching quality was measured primarily by the frequency with which teachers reported using classroom teaching practices reflecting the NBPTS. Because collaborative and reflective practice activities are important components of the NBPTS, these are also included but examined separately from classroom teaching practices.

Classroom Teaching Practices

To explore differences in teachers' teaching quality, we surveyed three subgroups in the sample. Our goal was to select groups that were large enough so that meaningful conclusions could be drawn and to examine groups representing teachers of different grade levels. The three groups we selected were:

- Early Childhood Generalists (teachers teaching multiple content areas in grades K-3),
- Middle Childhood Generalists (teachers teaching multiple content areas in grades 4-6), and
- Adolescence and Young Adulthood Science (Middle and High School level science teachers).

Teachers responded to a series of statements regarding their classroom teaching practices. One set of items asked their level of agreement concerning their teaching practices on a five-point scale from strongly disagree to strongly agree. Most of the items, however, asked teachers to estimate the frequency with which they used various teaching practices identified in the NBPTS. Responses to these items were on a five-point scale: never, a few times a year, once or twice a month, about once a week, and two or more times per week. For Early and Middle Childhood Generalists, several questions also addressed their level of preparation to teach various content areas. Responses to these items were on a six-point scale: not at all prepared, not adequately prepared, somewhat well prepared, well prepared, very well prepared, and not applicable.

The content of the items addressing teaching quality were structured around the five core propositions of the NBPTS:

1. Teachers are committed to students and their learning. They:
    a. recognize individual differences and adjust practices,
    b. understand how students develop and learn,
    c. treat students equitably, and
    d. have a mission that extends beyond developing the cognitive capacity of their students (e.g., students' self-concept, motivation, character, etc.).

    (Sample item: *I take students' special needs into account when planning curriculum and instruction.*)
2. Teachers know the subjects they teach and how to teach those subjects to students. They:

a. appreciate how knowledge in their subjects is created, organized, and linked to other disciplines,
b. command specialized knowledge of how to convey subjects, and
c. generate multiple paths to knowledge.

(Sample item: *My students use hands-on/manipulative materials in learning activities.*)

3. Teachers are responsible for managing and monitoring student learning. They:
   a. use multiple methods to meet goals,
   b. orchestrate learning in group settings,
   c. value student engagement,
   d. regularly assess student progress, and
   e. are mindful of their principal objectives.

   (Sample item: *I provide students with choices of activities in different content areas.*)
4. Teachers think systematically about their practice and learn from experience. They:
   a. are continually making difficult choices that test their judgment, and
   b. seek the advice of others and draw on education research to improve their practice.

   (Sample item: see Reflective Practices and Collaboration sections of General Survey.)
5. Teachers are members of learning communities. They:
   a. contribute to school effectiveness by collaborating with other professionals,
   b. work collaboratively with parents, and
   c. take advantage of community resources.

   (Sample item: *I involve parents/guardians in classroom activities.*)

Because the NBPTS that articulate these five propositions vary somewhat by certification area, different sets of items were written for each of the three subgroups. Most of the items were based directly on the NBPTS standards, while some were drawn from other national surveys identified in the methods section at the beginning of the report. Propositions 1, 2, 3, and 5 are addressed in the questions pertaining to classroom teaching practices and are summarized separately for the three subsets of teachers who responded to these items. Propositions 4 and 5 pertain primarily to collaboration and reflective practice and are summarized separately as all teachers surveyed responded to these items.

Early Childhood Generalists

One hundred and two respondents completed this survey and of these, 100 provided information regarding certification status. In comparing teaching quality across the teacher groups, we wanted a fairly homogeneous group of teachers. Thus, the results presented represent data from only teachers of self-contained classrooms (n=67). As Figure 18 shows, a large percentage of the self-contained classroom teachers (42%) taught first grade, while a third of them taught kindergarten. Less than 10% reported teaching more than one grade level and about 10% taught second grade. Because of the small sample size, respondents were combined into two groups: certified/candidates and teachers not involved in certification.

Results indicated that the two teacher groups were significantly different in terms of teaching quality measured in Propositions 2, 3, and 5 and in the composite teaching quality scale. The two teacher groups were similar only in terms of Proposition 1. Figure 19 shows the mean item score for each proposition by teacher group. Mean item scores were used rather than

summed scale scores because the number of items differed across Propositions. Thus, according to these measures of teaching quality, early childhood generalist teachers of self-contained classrooms who are certified or candidates scored higher on three of the four major Propositions and on the composite teaching quality measure. When responses from all 100 teachers completing this survey were examined, differences between the certified/candidates teachers and those who had not been involved in certification were substantially larger and in the same direction.

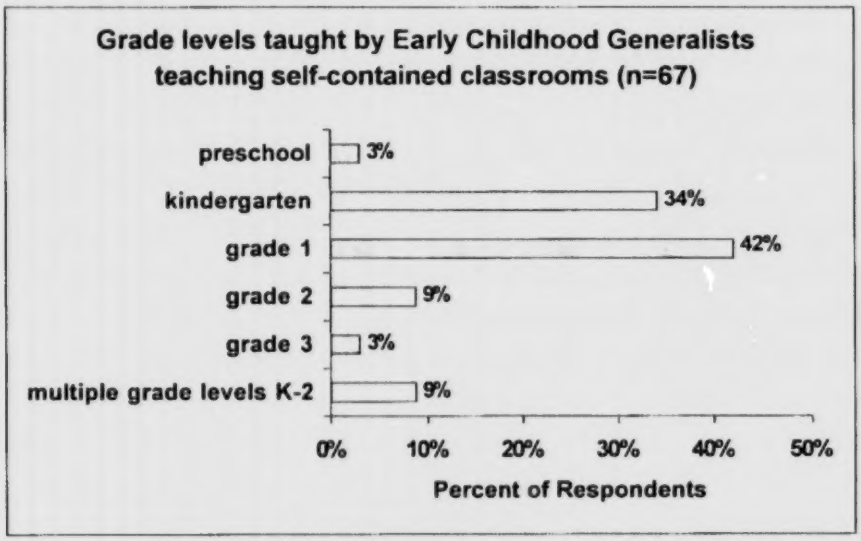
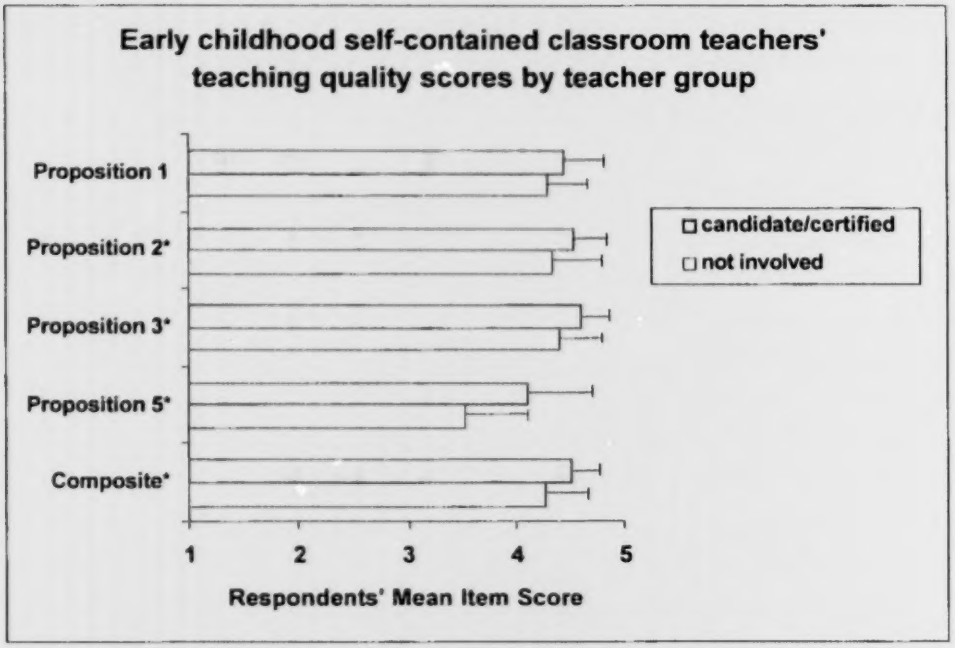


Figure 18.

Early childhood generalists were also asked to rate how well prepared they were to make connections between and among topics within and across disciplines; to promote student understanding in English language arts, mathematics, science, social studies, and the arts; to teach students whose first language is not English; and to incorporate technology as an important component of learning. Certified/candidate teachers and teachers uninvolved in certification responded similarly to all items. Most rated themselves as either well prepared or very well prepared with the exception of promoting student understanding in the arts, teaching students whose first language is not English, and incorporating technology in learning (see Table A7 in Appendix A).



*The difference between candidate/certified teachers and teachers not involved in certification is statistically significant

Figure 19.

Middle Childhood Generalists

One hundred and one respondents completed this survey and of these, 96 provided information regarding certification status. In comparing teaching quality across the teacher groups, we wanted a fairly homogeneous group of teachers. Thus, the results presented represent data from only teachers of self-contained classrooms (n=86). As Figure 20 shows, a large percentage of self-contained classroom teachers (42%) taught fourth grade, while almost a third of them taught third grade. Less than 10% reported teaching more than one grade level and about 15% taught fifth grade. Because of the small sample size, respondents were combined into two groups: certified/candidates and teachers not involved in certification.

Results indicated that the two teacher groups were significantly different in terms of teaching quality measured in Propositions 1, 3, and the composite teaching quality scale. Differences between the two teacher groups approached statistical significance in Proposition 2 while the two groups were similar in terms of Proposition 1. Figure 21 shows the mean item score for each proposition by teacher group. Mean item scores were used rather than summed scale scores because the number of items differed across Propositions. Thus, according to these measures of teaching quality, early childhood generalist teachers of self-contained classrooms who are certified or candidates scored higher on two of the four major Propositions and on the composite teaching quality measure.

When responses from all 96 teachers completing this survey were examined, differences between the certified/candidates teachers and those who had not been involved in certification were substantially larger and in the same direction. Significant differences between the two

teacher groups were obtained for all the propositions except Proposition 5, which approached significance.

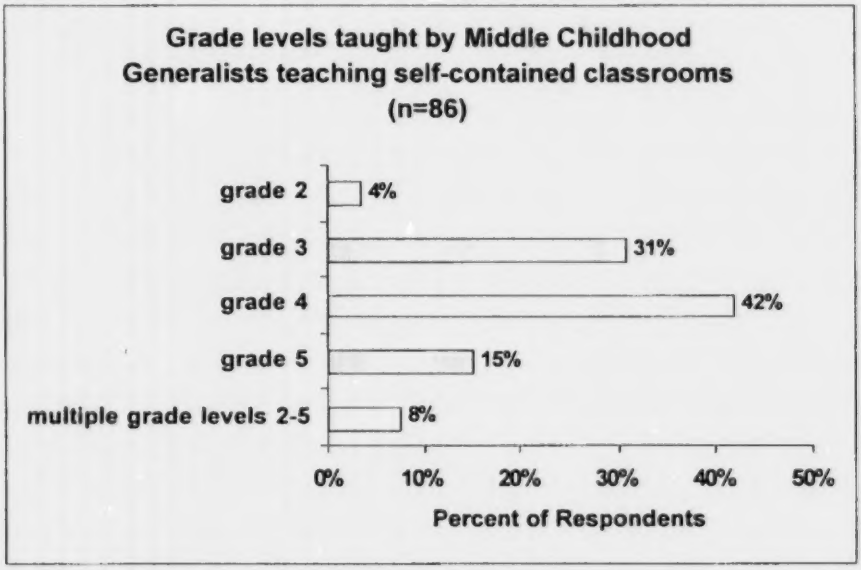
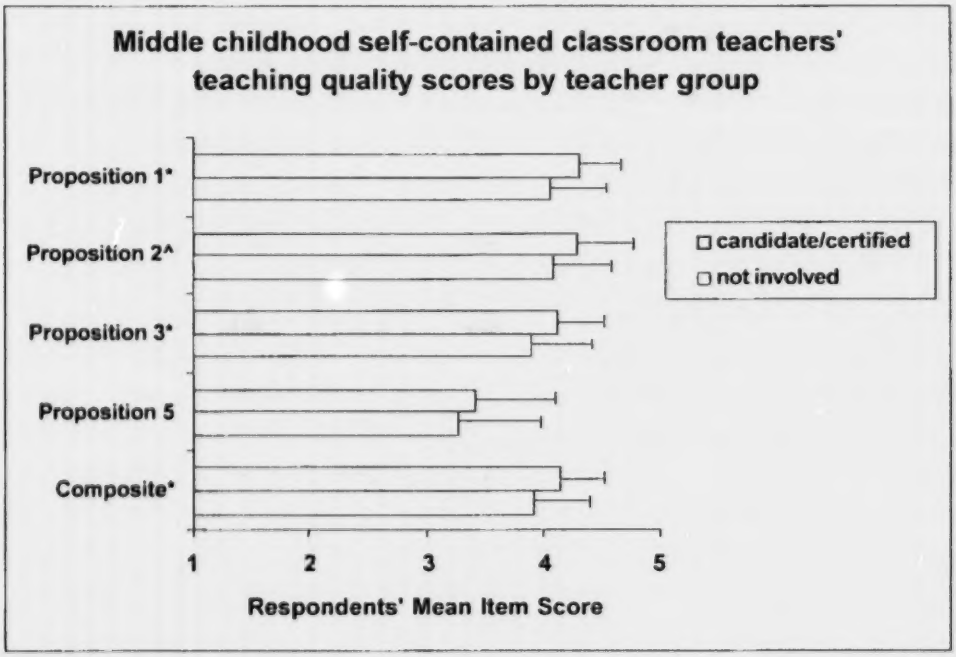


Figure 20.



*The difference between candidate/certified teachers and teachers not involved in certification is statistically significant.
^The difference between candidate/certified teachers and teachers not involved in certification approaches statistical significance.

Figure 21.

Middle childhood generalists were also asked to rate how well prepared they were to make connections between and among topics within and across disciplines; to promote student understanding in English language arts, mathematics, science, social studies, the arts, and health; to teach students whose first language is not English; and to incorporate technology as an important component of learning. Most rated themselves as either well prepared or very well prepared with the exception of promoting student understanding in the arts, incorporating technology as an important component of learning and teaching students whose first language is not English (see Table A8 in Appendix A).

Results showed that compared to teachers uninvolved in certification, certified/candidate teachers perceived themselves as being more prepared to promote student understanding in English language arts, science, and social studies; in incorporating technology as an important component of learning; and making connections between and among topics within and across disciplines.

Adolescence and Young Adulthood/Science

Forty-three respondents completed this survey and of these, 41 provided information regarding certification status. Almost all respondents taught high school science (88%) while 7% taught middle school and 5% taught science at both the high school and middle school level. Teachers across the three groups differed in terms of their educational attainment (having a master's degree) and years of teaching experience. Since these were correlated with some of the teaching quality scale scores, they were statistically controlled for in the analyses. Because of the small sample size, respondents were combined into two groups: certified/candidates and teachers not involved in certification. Results indicated that the two teacher groups were significantly different in terms of teaching quality measured in Proposition 1, but were similar in teaching quality reflected in the other three Propositions and the composite score. Figure 22 shows the mean item score for each proposition by teacher group. Mean item scores were used rather than summed scale scores because the number of items differed across Propositions. Thus, according to these measures of teaching quality, middle and high school level science teachers who are certified or candidates report more frequent use of teaching practices reflected in Proposition 1, but overall appear similar to teachers not involved in the certification process. It should be noted that the sample size for this group is relatively small and may account for the lack of statistical significance in the differences between the two teacher groups.

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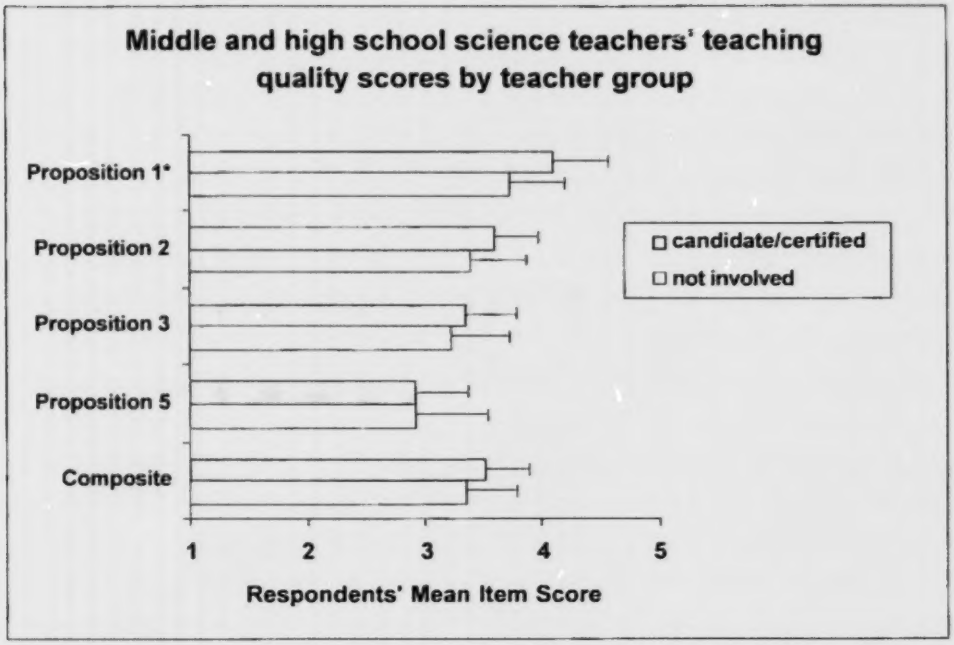
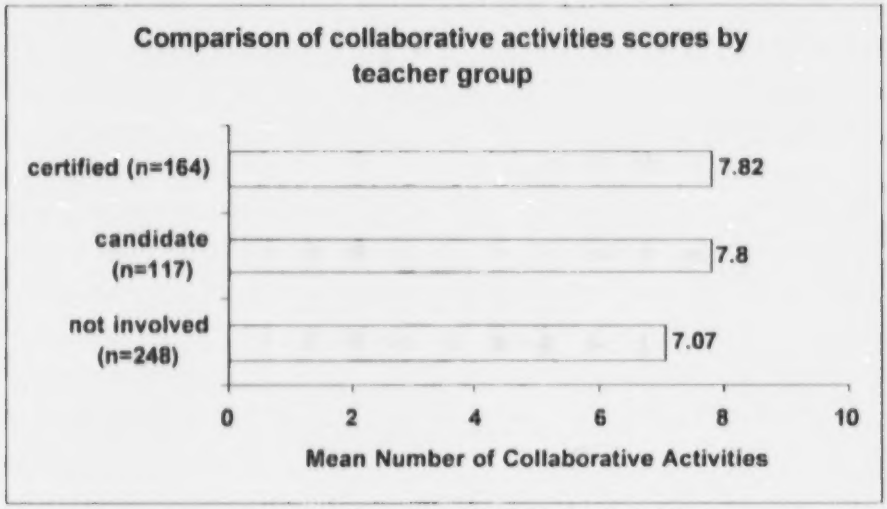


*The difference between candidate/certified teachers and teachers not involved in certification is statistically significant.

Figure 22.

Collaboration

Teachers' involvement in collaborative activities was assessed with 10 items describing common collaborative activities. Teachers were asked to report whether or not they participated in each activity during the previous 12 months. Their responses to these 10 items were then summed to create a scale score indicating the total number of activities in which they participated. Figure 23 shows the mean number of different collaborative activities in which teachers reported participating by teacher group. Certified teachers and candidates reported participating in significantly more collaborative activities than teachers not involved in certification.



*The difference between certified teachers/candidates and teachers not involved in certification is statistically significant.

Figure 23.

As Table 6 shows, compared to teachers not involved in certification, higher percentages of certified teachers and candidates reported that they:

- Collaborated with teachers outside their school district to improve student learning.
- Collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning.

Compared to uninvolved teachers, larger percentages of certified teachers were also more likely to have:

- Collaborated with other teachers at their school to share and improve instructional strategies.
- Coordinated course content with other teachers.
- Collaborated with colleagues to develop curriculum for their school.

Candidates were more likely than uninvolved teachers to have:

- Collaborated with colleagues in planning integrated curricula.
- Collaborated with learning specialists to address the learning of special needs students.

The three teacher groups were similar in the percentages reporting that they:

- Met with a local group of teachers to study/discuss teaching issues.
- Collaborated with colleagues to develop standards, benchmarks, and performance assessment measures.
- Collaborated with administrators to improve student learning.

Table 6. Percent of respondents by teacher group who reported participating in each collaborative activity during the past 12 months.

Collaborative Activities During the Past 12 Months	Not Involved	Candidate	Certified
Met with a local group of teachers to study/discuss teaching issues.	87% n=223	90% n=105	92% n=154
Collaborated with other teachers at my school to share and improve instructional strategies.^	87% n=222	90% n=105	94% n=157
Coordinated course content with other teachers.^	79% n=200	84% n=98	88% n=147
Collaborated with colleagues to develop curriculum for my school.^	74% n=189	81% n=95	85% n=142
Collaborated with colleagues to develop standards, benchmarks, and performance assessment measures.	80% n=204	78% n=91	83% n=139
Collaborated with colleagues in planning integrated curricula.†	58% n=148	73% n=85	63% n=105
Collaborated with learning specialists to address the learning of special needs students.†	80% n=203	90% n=105	82% n=138
Collaborated with administrators to improve student learning.	68% n=173	74% n=87	72% n=121
Collaborated with teachers outside my school district to improve student learning.*	51% n=129	62% n=73	66% n=111
Collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning.*	44% n=112	59% n=69	60% n=100

*The difference between certified/candidate teachers and teachers uninvolved in certification is statistically significant.

†Candidates differed significantly from teachers uninvolved in certification.

^Certified teachers differed significantly from teachers uninvolved in certification.

If teachers indicated that they had participated in a collaborative activity during the past 12 months, they were then asked to indicate how often they did so and were given three response options: 1-2 times, 3-9 times, or 10 or more times. As Table A9 in Appendix A shows, differences in the frequency of participation across teacher groups were seen in half the activities listed:

- Certified teachers and candidates met with a local group of teachers to study/discuss teaching issues more often compared to teachers not involved in certification.
- Candidates collaborated with other teachers at their school to share and improve instructional strategies more often compared to uninvolved teachers.
- Candidates also collaborated with learning specialists to address the learning of special needs students more frequently compared to uninvolved teachers.
- Certified teachers and candidates collaborated with teachers outside their school district to improve student learning more often than uninvolved teachers.
- Certified teachers collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning more frequently than uninvolved teachers.

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Teachers were also asked how the collaborative activities they participated in had affected their teaching. They responded on a five-point scale from harmed a lot to improved a lot. Roughly 60% of the certified teachers and candidates reported that these activities had improved their teaching a lot compared to 31% of uninvolved teachers (see Figure 24). Conversely, higher percentages of uninvolved teachers said the activities had improved their teaching somewhat or had no effect.

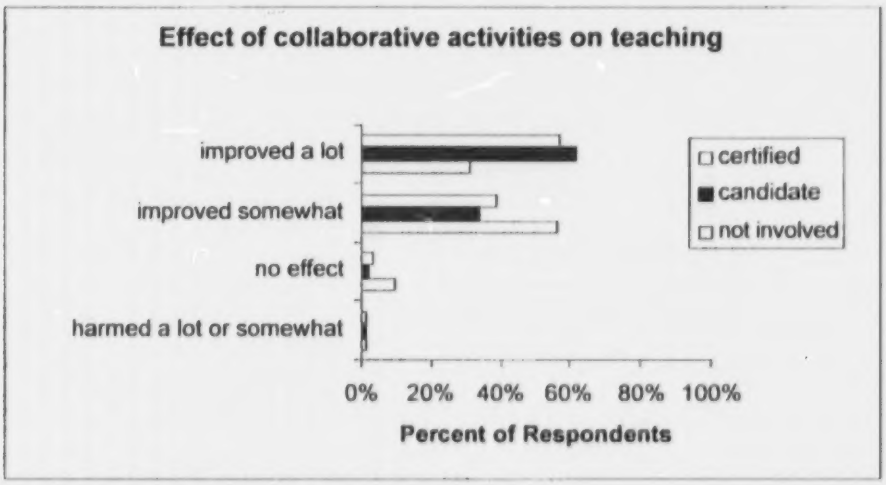


Figure 24.

A similar pattern of results was seen when teachers were asked how their collaborative activities had affected their students' learning: almost half of the certified teachers and candidates said the activities had improved their students' learning a lot compared to less than a fourth of uninvolved teachers. Uninvolved teachers were more likely to report that the activities had improved their students' learning somewhat or had no effect compared to certified teachers and candidates (see Figure 25).

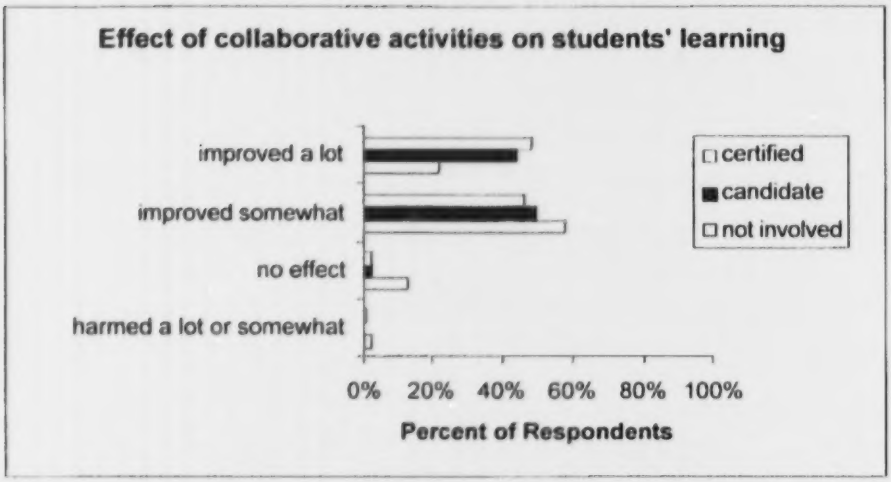
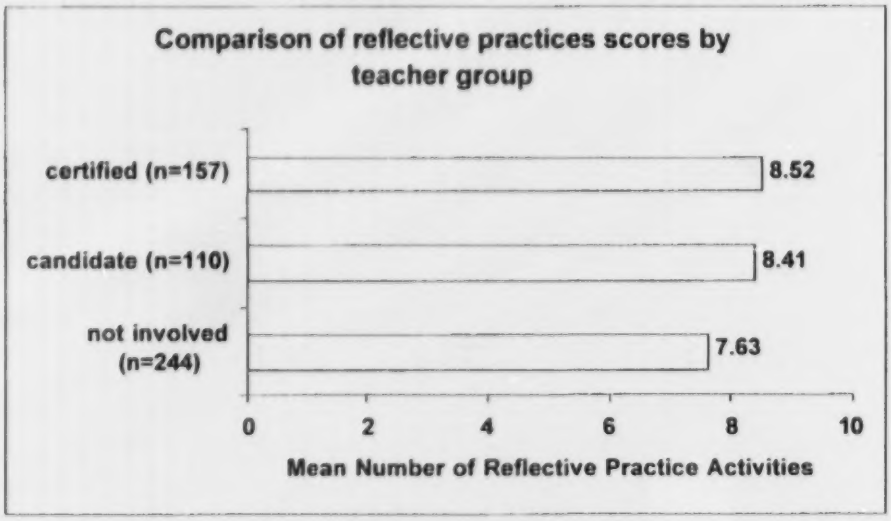


Figure 25.

Reflective Practice

Teachers' involvement in reflective practice activities was assessed with 10 items describing various reflective practices. Teachers were asked to report whether or not they participated in each activity during the previous 12 months. Their responses to these 10 items were then summed to create a scale score indicating the total number of activities in which they participated. Figure 26 shows the mean number of different reflective practice activities teachers reported participating in by teacher group. Certified teachers and candidates reported participating in significantly more reflective practice activities than teachers not involved in certification.



*The difference between certified teachers/candidates and teachers not involved in certification is statistically significant.

Figure 26.

As Table 7 shows, compared to teachers not involved in certification, higher percentages of certified teachers and candidates reported that they:

- Incorporated feedback from parents to evaluate and improve their teaching.
- Incorporated recent research findings into their teaching.
- Used student work to assess their teaching.

Certified teachers were more likely than uninvolved teachers to have:

- Incorporated feedback from students to evaluate and improve their teaching.
- Read professional publications relevant to their teaching.
- Conducted action research projects in their classroom.
- Experimented with new instructional strategies in their classroom.
- Experimented with new activities and demonstrations in their classroom.

The three teacher groups were similar in the percentages that reported they:

- Sought and used informal feedback from administrators to assess and improve their teaching.
- Deliberately aligned instruction with their school's comprehensive school improvement plan.

Table 7. Percent of respondents by teacher group who reported participating in each reflective practice activity during the past 12 months.

Reflective Practice Activities During the Past 12 Months	Not Involved	Candidate	Certified
Incorporated feedback from parents to evaluate and improve my teaching.*	63% n=161	87% n=102	79% n=131
Incorporated feedback from students to evaluate and improve my teaching.^	81% n=206	86% n=100	92% n=154
Read professional publications relevant to my teaching.^	94% n=240	95% n=111	99% n=165
Incorporated recent research findings into my teaching.†	80% n=205	92% n=108	93% n=154
Conducted action research projects in my classroom.^	41% n=104	50% n=56	54% n=87
Experimented with new instructional strategies in my classroom.^	91% n=231	95% n=111	97% n=162
Experimented with new activities and demonstrations in my classroom.^	95% n=243	98% n=115	99% n=165
Used student work to assess my teaching.*	91% n=229	99% n=116	96% n=158
Sought and used informal feedback from administrators to assess and improve my teaching.	53% n=135	60% n=69	62% n=104
Deliberately aligned instruction with my school's comprehensive school improvement plan.	77% n=198	78% n=91	80% n=132

*The difference between certified/candidate teachers and teachers uninvolved in certification is statistically significant.

†All three teacher groups differ significantly from one another.

^Certified teachers differed significantly from teachers uninvolved in certification.

If teachers indicated that they had participated in a reflective practice activity during the past 12 months, they were then asked to indicate how often they did so and were given three response options: 1-2 times, 3-9 times, or 10 or more times. As Table A10 in Appendix A shows, differences in the frequency of participation across teacher groups were seen in almost half the activities:

- Candidates incorporated feedback from parents to evaluate and improve their teaching more often compared to certified and uninvolved teachers.
- Certified teachers and candidates incorporated feedback from students to evaluate and improve their teaching more often than teachers uninvolved in certification.
- Certified teachers read professional publications relevant to their teaching more frequently than candidates and uninvolved teachers.
- Candidates experimented with new activities and demonstrations in their classroom more often than uninvolved teachers.
- Candidates sought and used informal feedback from administrators to assess and improve their teaching more often than certified and uninvolved teachers.

Teachers were also asked how the reflective practice activities they participated in had affected their teaching. They responded on a five-point scale from harmed a lot to improved a lot. Roughly 60% of the certified teachers and candidates reported that they had improved their teaching a lot compared to only a third of uninvolved teachers (see Figure 27). Conversely, about 60% of uninvolved teachers said the activities had improved their teaching somewhat, compared to about a third of certified teachers and candidates. Very few teachers reported that the activities had had no effect or a harmful one.

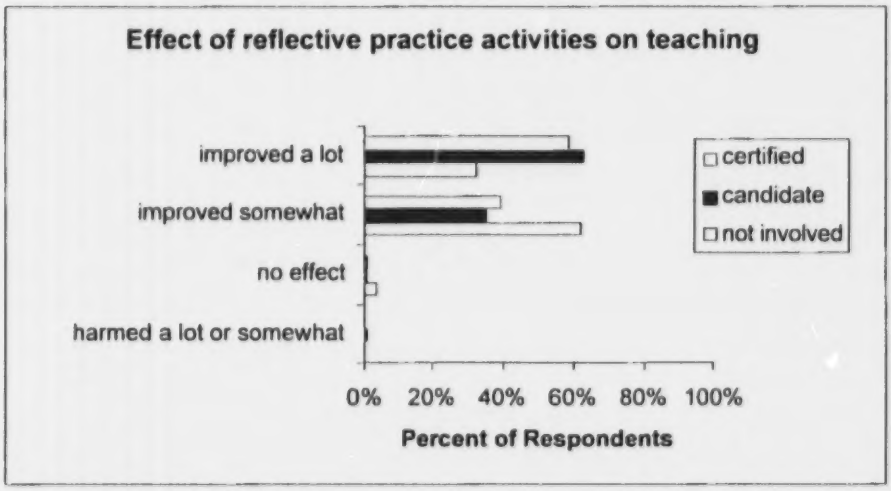


Figure 27.

A similar pattern of results was seen when teachers were asked how their reflective practice activities had affected their students' learning: more than half of the certified teachers and candidates said the activities had improved their students' learning a lot compared to 29% of uninvolved teachers. About 60% of uninvolved teachers reported that the activities had

improved their students' learning somewhat compared to less than half of certified teachers and candidates. Almost no teachers reported that they had no effect or a harmful one (see Figure 28).

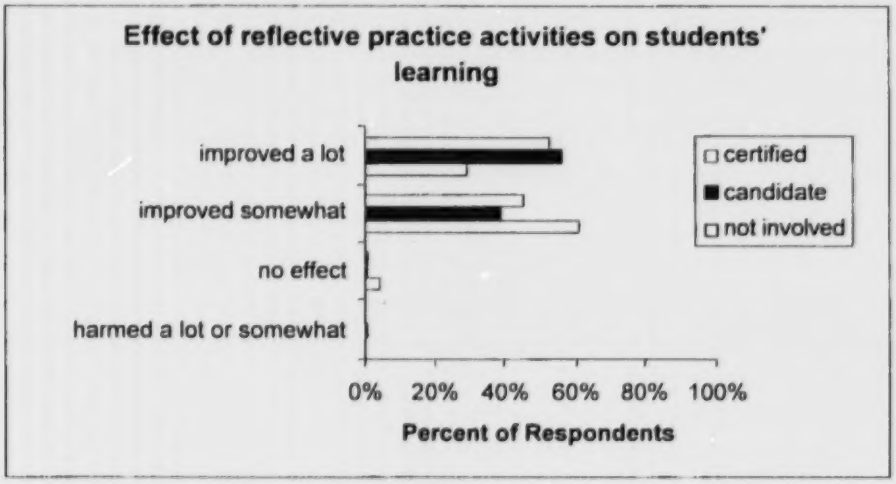


Figure 28.

Teachers' Perceptions of National Board Certification Process and Its Effects

Examination of group differences provides one source of information about the effects of National Board Certification on teachers' professional development, professional services, induction and retention in teaching, and teaching quality. A second source used in this evaluation is the perceptions that teachers have about the effects of certification after they have been involved in the process.

Certified teachers and candidates near completion of the certification process were asked to complete a series of questions that focused on evaluating the National Board Certification process. First, respondents were asked to rate the National Board Certification process as a professional development experience. Respondents were very positive in their overall rating with more than two-thirds (69%) rating it as excellent and another 25% rating it good. Three percent said it was an average professional development experience and another 3% rated it as fair or poor. Figure 29 shows that certified teachers tended to rate the certification process more positively than candidates. This may be partly due to the fact that candidates were still in the process of completing certification and had not had time to reflect on it. Nonetheless, both groups rated the experience very positively.

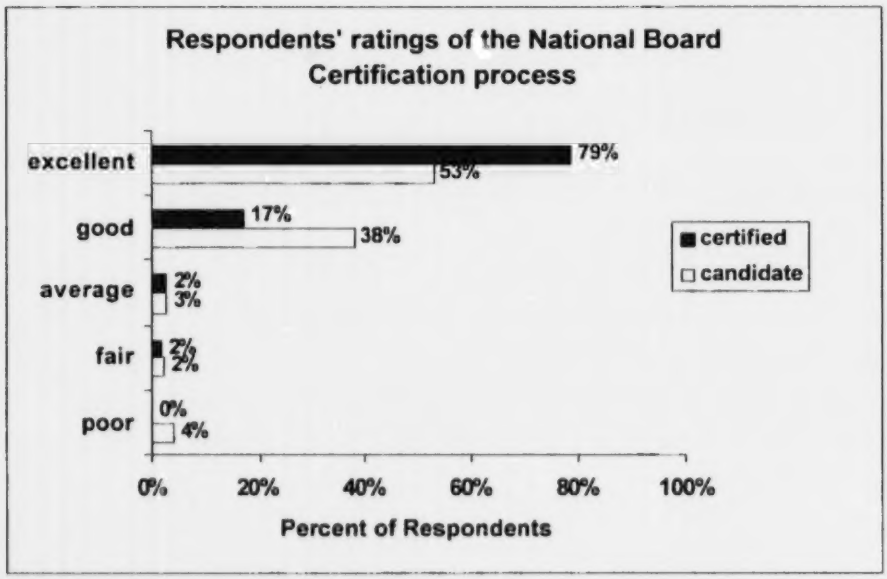


Figure 29.

When asked if they would recommend the National Board Certification process to their colleagues, respondents were generally positive. Most (62%) reported they definitely would and 24% said they probably would. Another 7% reported they would probably not or definitely not, and 7% were not sure. Certified teachers and candidates responded similarly to this question.

Teachers were also asked to explain why they would or would not recommend certification to their colleagues. More than three-fourths of respondents gave open-ended answers to this question. Of these 209 teachers, 17 (8%) said they definitely or probably would not recommend the certification process. More than half of these respondents said one reason was because the certification process was too time consuming, and almost a fourth of them (n=4) said it was because it was difficult. Almost 20% each (n=3) cited vague scoring/feedback and insufficient rewards as reasons why they wouldn't recommend certification to their colleagues. Teachers who weren't sure if they would recommend certification (n=18) cited similar reasons: a third said it was too time consuming, 28% said the rewards were insufficient, and almost 20% said it was difficult. In both of these groups, one or two teachers each cited a number of other reasons including, that certification was not linked to student learning, was expensive, and required too much paperwork.

Teachers were also asked to what extent their AEA's professional development activities related to the National Board Certification process. Only 10% reported that they related to a great extent, almost a fourth (23%) said to a moderate extent, another 23% said a small extent, and almost a third (29%) reported that they did not relate at all. Fifteen percent were not sure to what extent the two were related.

When asked if they had received any teaching awards or honors since beginning the National Board Certification process, 29% reported that they had and 71% had not. Certified

teachers were significantly more likely to have received awards compared to candidates, with 44% reporting they had received teaching awards compared to 7% of candidates. This is not surprising given that certified teachers have had more time in which to do this.

Teachers were also asked if they had voluntarily mentored a beginning teacher since beginning the National Board Certification process. Overall, 42% reported that they had and 58% had not. Certified teachers were significantly more likely to have mentored a beginning teacher with 51% reporting they had compared to 29% of candidates. Again, certified teachers have had more time in which to do this so the finding is not surprising.

Teachers were also asked to rate how supportive their curriculum director, principal, superintendent, school board, and Iowa Office for Staff Development (UNI) were in their pursuit of National Board Certification. Certified teachers and candidates responded similarly so their data was aggregated. As Table 8 shows, approximately a fourth to a third of respondents reported their curriculum director, superintendent, and school board were not supportive. Roughly 20% reported each of these three was somewhat supportive. Respondents perceived their principals to be more supportive with 59% rating them as supportive or very supportive. Almost all respondents (85%) rated the Iowa Office for Staff Development (UNI) as very supportive with 7% rating it as supportive.

Table 8. Teachers' perceptions of support for National Board Certification.

Person or Agency Support for Pursuing National Board Certification	Very supportive	Supportive	Somewhat supportive	Not supportive	Not applicable
Your curriculum director	16% n=45	9% n=24	17% n=48	23% n=64	35% n=97
Your principal	39% n=107	20% n=56	27% n=74	12% n=33	3% n=7
Your superintendent	20% n=54	18% n=51	22% n=62	29% n=80	11% n=30
Your school board	12% n=32	13% n=36	20% n=54	34% n=92	22% n=60
Iowa Office for Staff Development (UNI)	85% n=235	7% n=19	4% n=12	1% n=4	2% n=6

Teachers also responded to a series of statements about the effects of the National Board Certification process. These statements were taken from or closely based on items from the *Survey of Florida National Board Certification Candidates* (NBPTS, 1999). They were asked to what extent they agreed or disagreed that each of the statements in Table 9 was true about them since beginning the National Board Certification process. Teachers responded to each item on a five-point scale from strongly disagree to strongly agree, however, for ease of interpretation the categories have been grouped into the three main ones shown in Table 9. Certified teachers and candidates responded similarly so their data was aggregated. As Table 9 shows, at least 80% of respondents agreed or strongly agreed that since beginning the National Board Certification process, they have developed stronger curricula and improved ways to evaluate student learning, are better teachers, spend more time reflecting on their teaching and ways of improving it, and

that the level of engagement in learning by their students and themselves has increased. At least two-thirds of respondents agreed or strongly agreed that they more often involved parents and other community members as resources to support their teaching practice, more easily connect their district's standards and benchmarks to their day-to-day teaching practice, and that their collaboration with other teachers is more focused on issues of teaching and student learning. The only item that did not receive overwhelming agreement was teachers' response to their involvement in professional development activities, where slightly less than half agreed this had increased.

Table 9. Teachers' perceptions of the effects of the National Board Certification process.

Possible Effects of the National Board Certification Process	Agree or Strongly Agree	Neutral	Disagree or Strongly Disagree
I have developed stronger curricula and improved ways to evaluate student learning.	89% n=244	7% n=20	4% n=11
I believe I am a better teacher.	90% n=247	6% n=16	5% n=12
I more often involve parents and other members of my community as resources to support my teaching practice.	68% n=189	22% n=60	9% n=26
I more easily connect my district's standards, benchmarks and performance assessments (i.e., state student standards) to my day-to-day teaching practice.	70% n=191	21% n=59	8% n=22
The level of engagement in learning by my students and myself has increased.	83% n=228	12% n=31	6% n=15
My collaboration with other teachers is more focused on issues of teaching and student learning.	68% n=186	24% n=66	8% n=20
My involvement in professional development activities has increased.	48% n=132	34% n=92	18% n=50
I spend more time reflecting on my teaching and ways of improving it.	91% n=248	6% n=17	3% n=9

Principal Survey Methods

The final source of information about the effects of National Board Certification is the perceptions of principals who have had teachers in their schools participate in certification.

Principal Survey Sample

In Spring 2001, a sample of 287 principals in Iowa was selected to participate in this study. These individuals were selected because at least one teacher in their school had been involved in the National Board Certification process. A self-report survey and self-addressed envelope were mailed to principals in mid-February, 2001. Overall, 47% of the principals surveyed responded. All 134 were included in the final data set, however, 4.5% of the respondents reported that they had not had one or more teachers in their school participate in the National Board Certification process. Consequently, these individuals were unable to complete all of the survey questions. Because we were not seeking a representative sample of principals,

their demographic characteristics are presented but not compared to those of the state population of principals.

Description of Principal Survey

A four-page survey was created to gain a better understanding of principals' perceptions of National Board Certification, including their familiarity and agreement with the philosophy of National Board Certification, with its connection to their school improvement plan and AEA's professional development activities, and with teacher compensation and certification. Principals are also asked about their perceptions of the effects of certification on participating teachers' collaboration, school climate, teaching, professional development, professional services, reflective practices, and student learning. Finally, they were asked about their level of involvement in teachers' certification process and their support for certification of administrators. Some of the items are identical to those on the teacher survey so that information from both sources can be compared.

Principal Survey Results

Demographics

Several demographics questions were included to gain an understanding of the sample. Of the 134 respondents, 61% were male and 29% were female. The respondents' average years of administrative experience was 12.74 (median=12), ranging from 1 to 35 years. Figure 30 shows that 44% of respondents had 10 or fewer years of total administrative experience, 25% had 11-15 years, and 31% had 16 or more years experience. Respondents' average years of administrative experience at their current school was 7.85 (median=6), ranging from 1 to 33 years. Almost half the respondents (44%) had fewer than six years of administrative experience at their current school, roughly 25% had been there 6-10 years, and almost 30% had 11 or more years experience at their current school (see Figure 31). Figure 32 shows the percent of respondents by size of school district. Almost half (46.5%) worked in school districts with less than 1,000 students, and roughly 25% were in districts with 2,500 or more students.

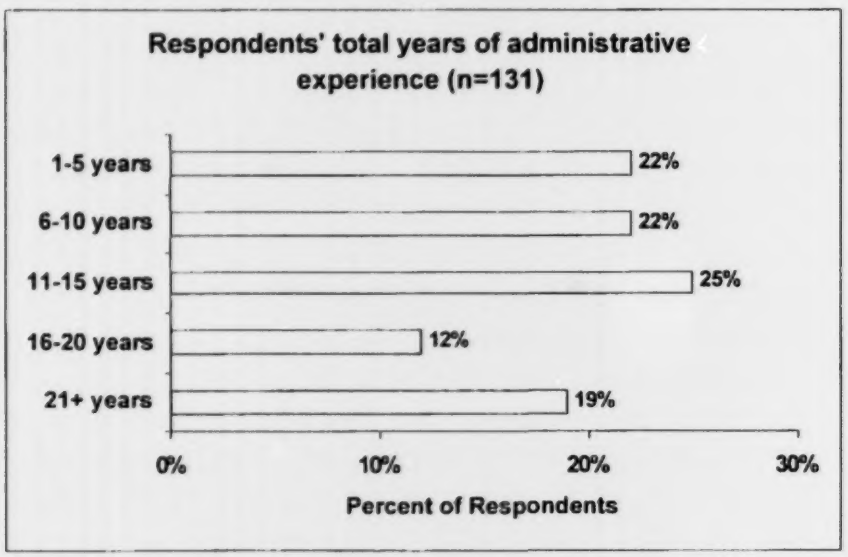
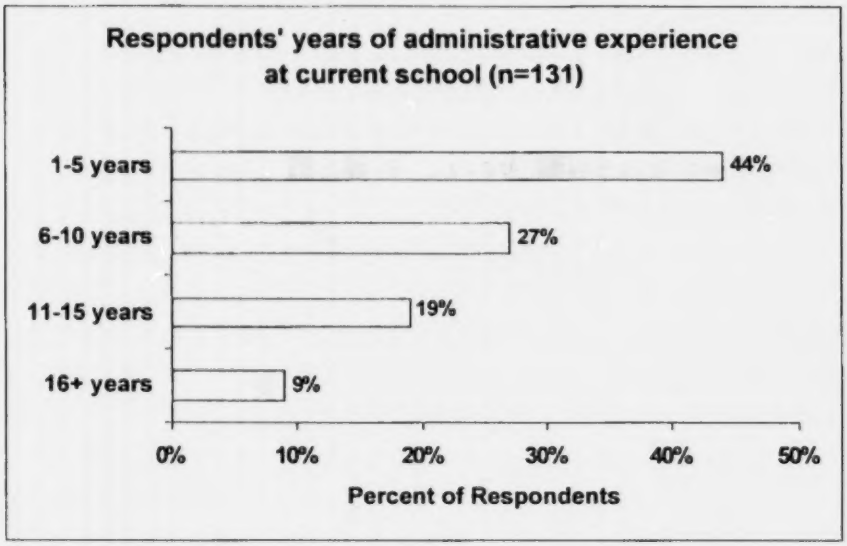


Figure 30.



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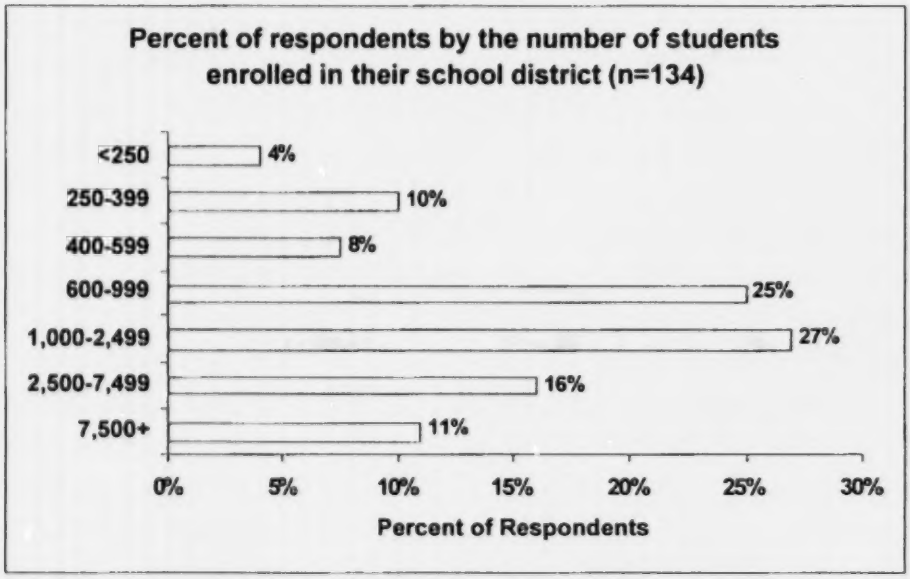

Figure 32.

Familiarity and agreement with NBC Teaching Standards

Most principals (59%) reported that they were either very familiar or fairly familiar with National Board Certification for teachers. Only about 5% said they were not at all familiar (see Figure 33). Almost three-fourths (72%) agreed or strongly agreed with the overall vision of education described in the National Board Professional Teaching Standards, about 20% were neutral, and 6% either disagreed or strongly disagreed (see Figure 34).

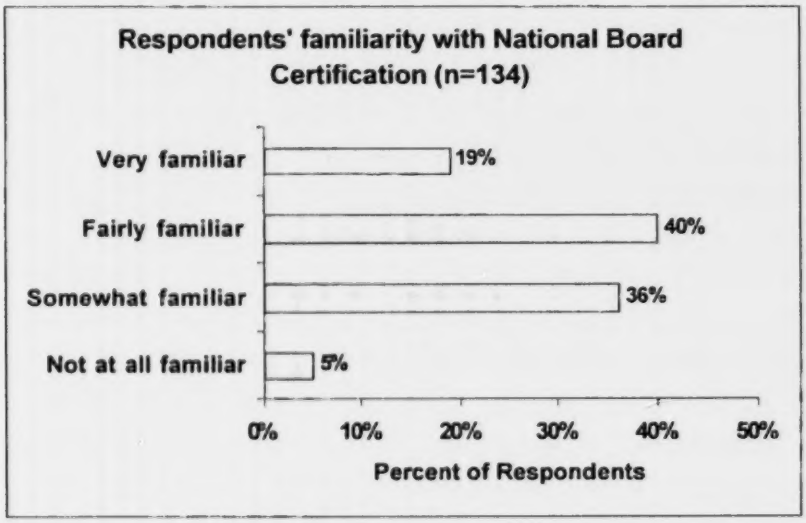

Figure 33.

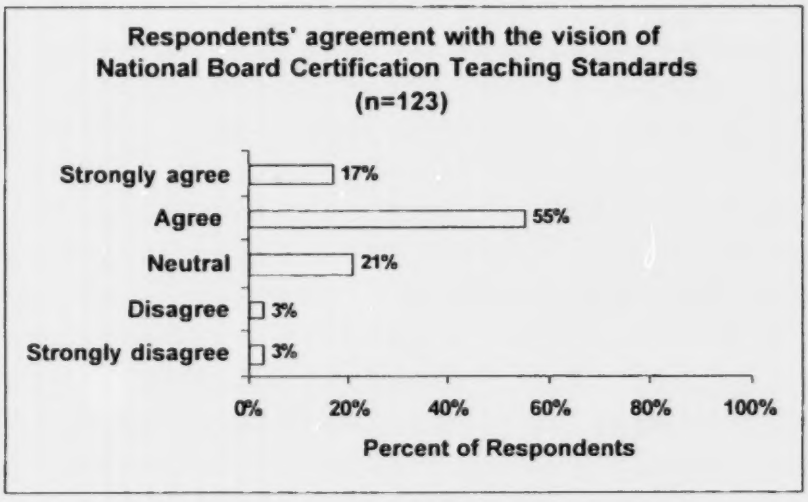

Figure 34.

Respondents were also asked to what extent the National Board Certification standards were connected to their school improvement plan and AEA professional development activities.

As Table 10 shows, half the respondents reported that National Board Certification standards were not at all connected or connected to a small extent with their school improvement plan. Roughly a third reported that they were connected to a moderate or great extent, and almost 15% said they were not sure. Similar responses were seen when respondents were asked to what extent their AEA professional development activities were related to the National Board Certification process: almost half (47%) reported not at all or to a small extent, almost a fourth (23%) said a moderate or great extent, and almost a third (31%) said they were not sure. Teachers were also asked to what extent the National Board Certification process was related to their AEA professional development activities. As Figure 35 shows, compared to principals, teachers were more likely to report that the two were related to a great extent or not at all. Conversely, principals were more likely to report that they were not sure of the extent to which the two were related.

Table 10. Principals' perceptions of National Board Certification and its relation to school improvement and AEA professional development.

Question	Great extent	Moderate extent	Small extent	Not at all	Not sure
To what extent are the National Board Certification standards connected to your school improvement plan?	8% n=10	29% n=36	27% n=34	23% n=29	14% n=17
To what extent do your AEA's professional development activities relate to the National Board Certification process?	3% n=4	20% n=25	32% n=41	15% n=19	31% n=39

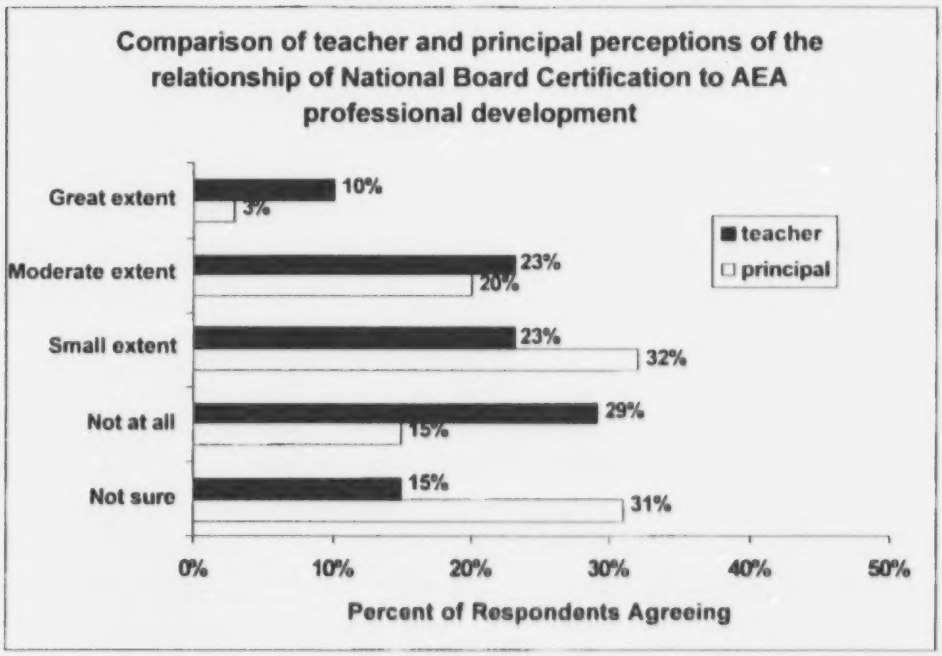

Figure 35.

Principals were also asked if teachers' compensation should be tied to National Board Certification. As Figure 36 shows, more than half (56%) said it definitely or probably should be tied to it, more than a third (36%) said it should definitely not or probably not, and about 10% were not sure. When asked if they were using Phase III funds to support teachers' National Board Certification process, almost all (84%) reported that they were not, 11% said they were, and 5% said it did not apply to them.

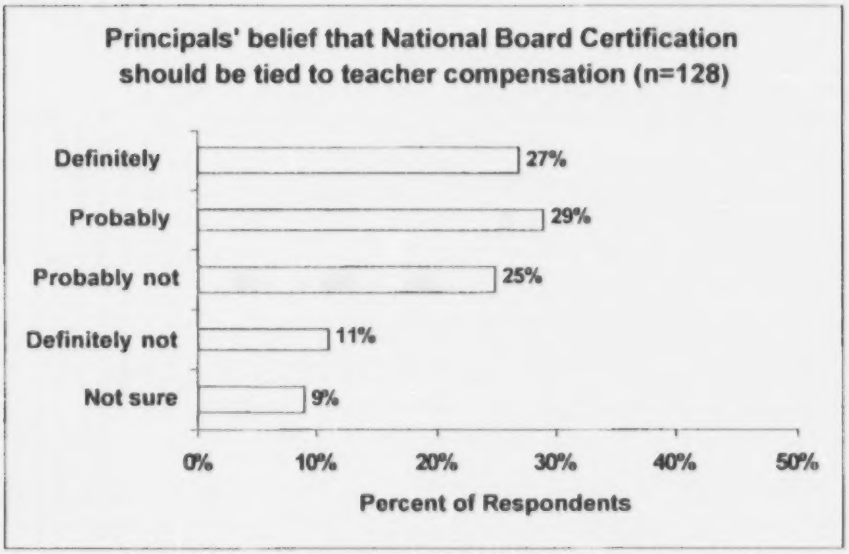

Figure 36.

Level of Involvement in Teachers' Certification Process

Principals were asked to what extent they had been involved in their teachers' pursuit of National Board Certification. As Figure 37 shows, 10% said they had been involved to a great extent, about a third to a moderate extent, almost half (46%) to a small extent, and about 10% had been not at all involved. To get a better sense of how they were involved, we asked them to identify which activities they participated in as part of their involvement in their teachers' National Board Certification process. As Figure 38 shows, almost all (83%) of respondents said they provided informal encouragement to teachers; more than half said they provided formal recognition; almost half said they exchanged informative memos; about a third each located resources to assist teachers and reviewed portfolios or videotapes; about a fourth each provided coaching and videotaping; 15% provided district financial support, and less than 10% said they participated in none of the activities listed.

Appendix A

Table A1. Number and percent of total respondents by involvement in National Board Certification.

Involvement in National Board Certification Process	
None, because I'm unaware of it	3.3% n=18
None, and I am not interested	28.6% n=157
None, but I am interested	11.9% n=65
I withdrew, and I do not intend to restart	1.8% n=10
I withdrew, but I intend to restart	1.3% n=7
Future advanced candidate*	0.5% n=3
Current advanced candidate**	4.4% n=24
Currently pursuing certification***	17.0% n=93
I was certified before 1998	2.4% n=13
I was certified in 1998	0.9% n=5
I was certified in 1999	17.5% n=96
I was certified in 2000	10.4% n=57

**Future advanced candidates* are teachers who completed the certification process but did not receive the score to become certified. They are eligible to "bank" their scores by rebuilding a portion(s) of their portfolio or retake an assessment center exercise question. There is a two-year time limit to complete this process.

***Current advanced candidates* are the same as above but they have just completed rebuilding their portfolio and have sent their entries to the NBPTS this Spring.

****Currently pursuing certification* are teachers who have participated in the process for the first time during this past year.

Table A2. List of items included in each scale.

Scale	General Teacher Survey	Early Childhood Generalist Survey	Middle Childhood Generalist Survey	Adolescence & Young Adulthood/ Science Survey
School Support	3a-3h	3a-3h	3a-3h	3a-3h
Collaboration	6a-6j	6a-6j	6a-6j	6a-6j
Reflective Practice	9a-9j	9a-9j	9a-9j	9a-9j
Professional Development	12a-12k	12a-12k	12a-12k	12a-12k
Professional Services	15a-15k	15a-15k	15a-15k	15a-15k
Proposition 1	-	18a-18f, 20a	18a-18g, 20a-20b	18b-18c, 18k-18l, 19i
Proposition 2	-	18g-18h, 20b-20o	18h, 18q, 20c-20j, 21a-21h	18d-18e, 18g-18j, 19a-19h, 20a-20f, 20h-20k, 21k, 22a-22b, 22d-22e
Proposition 3	-	18i-18n, 20p, 21a-21j, 22a-22g	18i-18n, 18r, 21i-21k, 22a-22f	18f, 18m, 20g, 21a-21j, 22c
Proposition 5	-	18o-18p, 22h-22k	18o-18p, 22g-22j	18n, 22f-22h

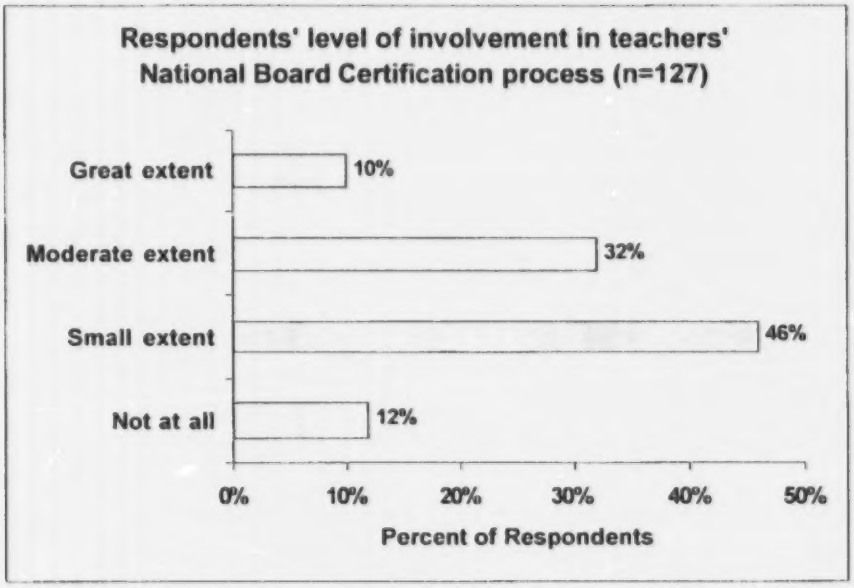

Figure 37.

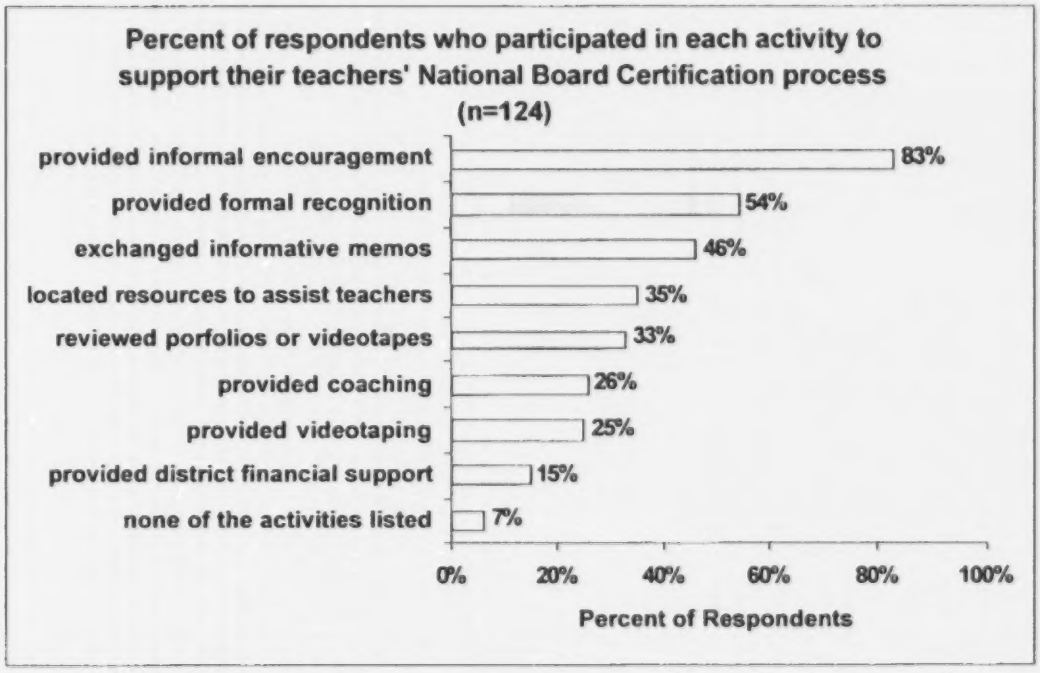

Figure 38.

Perceptions of the National Board Certification Process & Its Effects

School Climate

Principals were asked to what extent the National Board Certification process had affected teachers' teaching, conflict among teachers, and the learning climate within their school As Table 11 shows, very few respondents (11%) said that teachers' pursuit of National Board Certification had interfered to a moderate or great extent with teachers' teaching and almost half said it had not interfered at all. Similarly, less than 10% reported that involvement in certification had created conflict among teachers at their school to a moderate or great extent and almost two-thirds said it had not created conflict at all. Almost a third of respondents (32%) reported that their teachers' involvement in certification had improved the culture or learning climate in their school to a moderate or great extent. More than half, however, reported that it had improved the learning climate to a small extent or not at all.

Table 11. Principals' perceptions of the effects of the National Board Certification process.

Consequences of the National Board Certification Process	Great extent	Moderate extent	Small extent	Not at all	Don't know
Interfered with your teachers' teaching while they were pursuing certification.	2% n=3	9% n=11	38% n=48	42% n=53	9% n=12
Created conflict among teachers at your school.	3% n=4	6% n=8	19% n=24	66% n=85	6% n=7
Improved the culture or learning climate in your school.	6% n=8	26% n=33	28% n=36	28% n=36	11% n=14

Teachers' Collaboration

Collaboration among teachers and others involved in education has been identified as an important outcome of the National Board Certification process. Because of this, principals were asked if the National Board Certification process had improved or harmed collaboration between their teachers involved in this process and others, including colleagues, parents and community resources. None of the respondents reported that involvement in National Board Certification had *harmed* teachers' collaboration *a lot* so this response category was omitted from the Table 12. Very few (less than 5%) respondents reported that involvement in this process had *harmed* any of the 12 activities *somewhat*. Similarly, less than 5% of respondents reported that certification had *improved* any of the 12 collaborative activities *a lot*. About half to three-fourths of the principals (52-77%) reported *no change* in teachers' collaboration with the other individuals or groups listed below. Between 5 and 30% of principals said that teachers' collaboration had *improved somewhat*. At least a fourth of respondents said that teachers' collaboration with other teachers had *improved somewhat* in several ways including: improving instructional strategies, staff development, mentoring other teachers, and making important educational decisions in the school. About 20% reported that teachers' collaboration with other teachers on curriculum development, course content, and research projects had *improved*

somewhat. Sizable percentages of respondents (10-20%) said they did not know if the National Board Certification process had improved or harmed the teachers' collaborative activities.

Table 12. Principals' perceptions of the effects of the National Board Certification process on collaboration between teachers involved in the process and others.

Collaboration Among Teachers	Improved a lot	Improved somewhat	No change	Harmed somewhat	Don't know
Other teachers to improve instructional strategies?	3% n=4	30% n=38	52% n=65	3% n=4	12% n=15
Other teachers on curriculum development?	2% n=3	20% n=25	62% n=78	1% n=1	15% n=19
Other teachers on staff development?	3% n=4	25% n=31	58% n=73	0% n=0	14% n=18
Other teachers through mentoring?	3% n=4	26% n=35	55% n=73	0% n=0	11% n=14
Other teachers on textbook selection committees?	0% n=0	5% n=6	77% n=97	1% n=1	18% n=22
Other teachers on course content?	2% n=2	19% n=24	67% n=84	1% n=1	12% n=15
Other teachers on research projects?	2% n=3	19% n=24	62% n=78	0% n=0	17% n=21
Learning specialists to address the learning of special needs students?	4% n=5	13% n=16	69% n=87	1% n=1	14% n=17
Teachers outside the school on teaching issues?	0% n=0	18% n=22	61% n=77	1% n=1	21% n=26
School and community resources?	0% n=0	14% n=18	69% n=87	0% n=0	17% n=21
Parents to improve student learning?	2% n=2	18% n=22	61% n=77	1% n=1	19% n=24
Colleagues in making important educational decisions in the school?	3% n=4	26% n=33	53% n=67	4% n=5	14% n=17

Teachers' Teaching, Professional Development, Reflective Practice, and Professional Services

Principals were asked if they agreed or disagreed that the teachers at their school who had participated in the National Board Certification process did any of the 14 activities listed more since they became certified. These statements were taken from or closely based on items from the *Survey of Florida National Board Certification Candidates* (NBPTS, 1999) (see Table 13). Well over half the respondents agreed or strongly agreed that certified teachers at their school developed stronger curricula and improved ways to evaluate student learning; were better teachers; more easily connected the district's standards, benchmarks, and performance assessments to their day-to-day teaching practices, increased the level of engagement in learning by their students and themselves; were more focused on issues of teaching and student learning; enhanced the instructional strategies they use; enhanced course content in their classrooms; and

reflected more on their teaching and ways of improving it. Slightly less than half the respondents believed these teachers were more involved in professional development activities, and about a third said the teachers served on more education task forces, taught more in-service workshops, and involved parents and community members more often as resources to support their teaching practice.

Table 13. Principals' perceptions of the effects of the National Board Certification process.

Effects of National Board Certification	Agree or Strongly Agree	Neutral	Disagree or Strongly Disagree	Don't know
Belong to more professional organizations.	23% n=29	32% n=39	22% n=28	22% n=27
Receive more grants or awards for teaching.	20% n=25	35% n=43	30% n=36	15% n=18
Serve on more local, state, or national education task forces.	34% n=41	25% n=31	27% n=33	15% n=18
Teach more in-service workshops.	32% n=39	25% n=31	33% n=41	10% n=12
Develop stronger curricula and improved ways to evaluate student learning.	63% n=77	15% n=18	13% n=15	10% n=12
Are better teachers.	58% n=72	19% n=23	16% n=19	7% n=9
Involve parents and other members of the community more often as resources to support their teaching practice.	33% n=40	33% n=41	23% n=28	11% n=14
More easily connect the district's standards, benchmarks and performance assessments (i.e., state student standards) to their day-to-day teaching practice.	57% n=70	23% n=28	13% n=15	8% n=10
Increase the level of engagement in learning by their students and themselves.	63% n=77	19% n=23	10% n=12	9% n=11
Are more focused on issues of teaching and student learning.	64% n=78	21% n=26	8% n=9	8% n=10
Have enhanced the instructional strategies they use.	69% n=84	19% n=23	4% n=6	8% n=10
Have enhanced the course content in their classrooms.	60% n=74	24% n=30	8% n=10	7% n=9
Are more involved in professional development activities.	47% n=57	25% n=30	17% n=20	12% n=15
Reflect more on their teaching and ways of improving it.	69% n=85	17% n=21	5% n=7	8% n=10

Certified teachers and candidates were also asked about their perceptions of the effects of National Board Certification on a number of the activities identified in Table 13. Figure 39 compares the percent of teachers with principals agreeing or strongly agreeing with each statement. Compared to principals, substantially higher percentages of teachers agreed that since

going through National Board Certification they reflected more on their teaching and ways of improving it, increased the level of engagement in learning by their students and themselves, involved parents and community members more often as resources to support their teaching, were better teachers, and developed stronger curricula and improved ways to evaluate student learning.

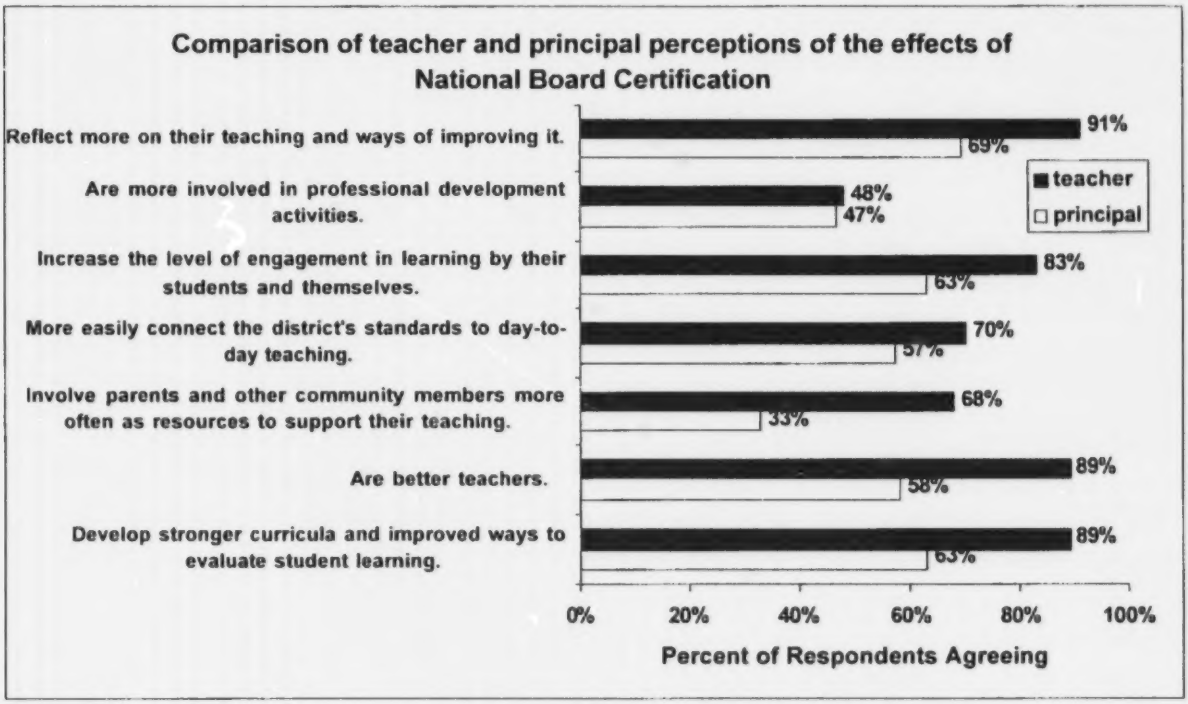

Figure 39.

Principals also were asked if they believed that their teachers were better or more innovative because of the certification process. More than half (54%) reported that they believed the teachers were better, slightly less than half (46%) said the teachers were about the same, and 1% said the teachers were poorer.

When asked if they perceived that there was increased student learning in the classrooms of the National Board Certified teachers, 38% responded affirmatively, 33% said they had not perceived increased student learning, and 30% said they did not know. If respondents reported that they had perceived increased student learning, they were asked to provide evidence to support their belief. Of the 38% percent or 46 principals who responded affirmatively, 42 provided an open-ended response to this question. As Figure 40 shows, principals provided a wide range of responses. The most commonly cited evidence of increased student learning was better teaching practices (38%), followed by student scores on benchmarks (24%), and more parental involvement (17%). More than 10% of respondents also cited general student achievement, observations by the principal, and observations by another teacher as evidence.

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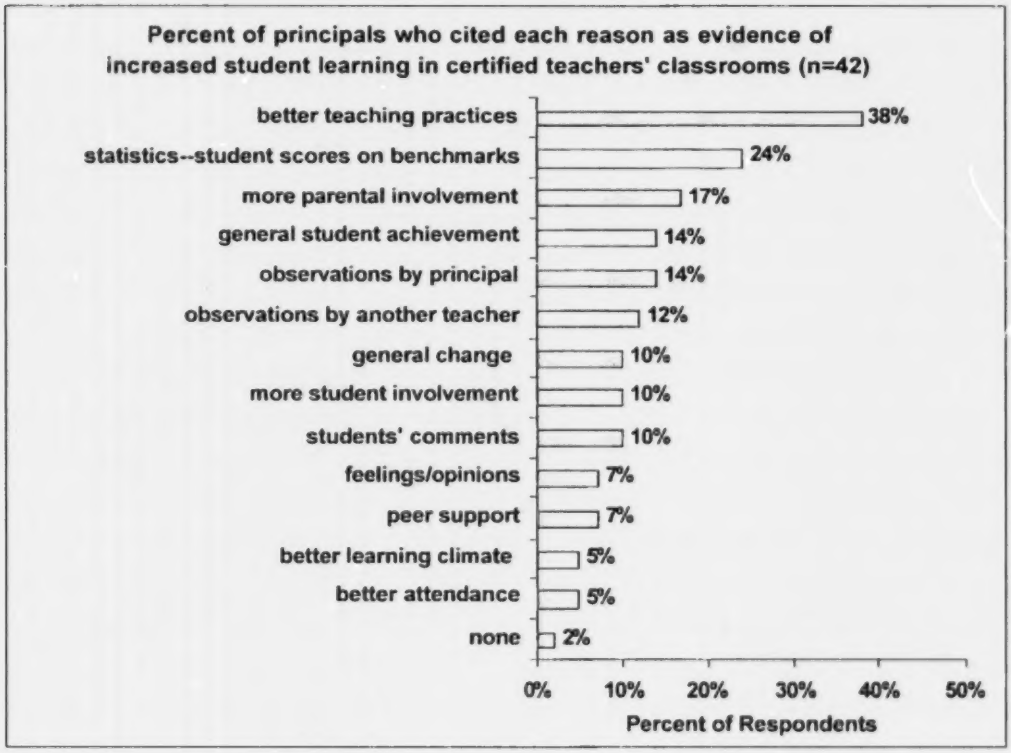

Figure 40.

Perceptions of National Board Certification Process for Administrators

Though National Board Certification for administrators does not exist, principals were asked if they would support such a process and participate in it if it did exist. The majority of principals responded positively when asked if they would support this type of certification. Almost 60% reported that they probably or definitely would support this, roughly 30% said they would probably not or definitely not, and 13% were not sure (see Figure 41). When respondents were then asked how likely they would be to participate in National Board Certification for administrators if it existed, fewer responded positively. Figure 42 shows that about a third (32%) said that they would likely or very likely participate, 43% reported it was unlikely or very unlikely they would participate, and 25% were neutral.

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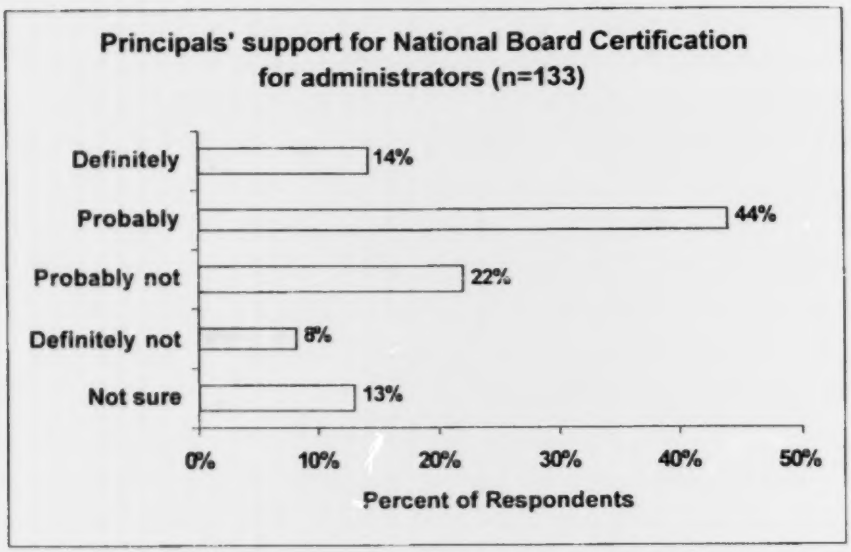

Figure 41.

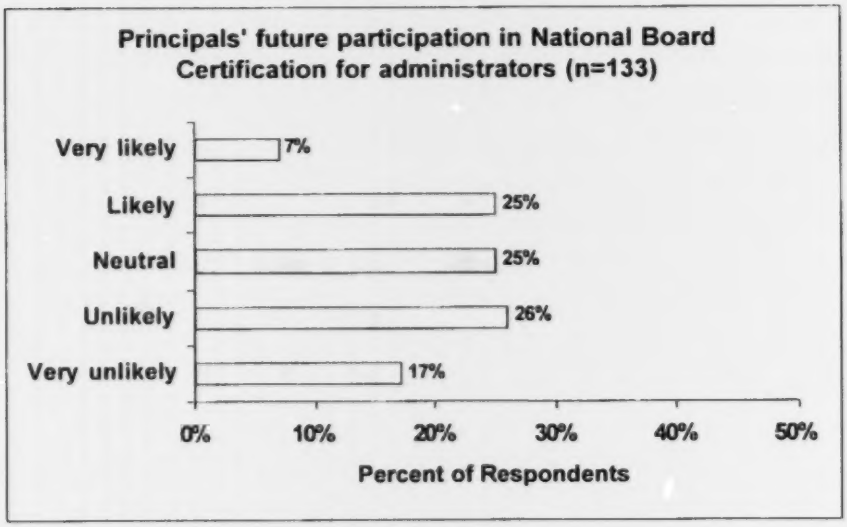

Figure 42.

Summary

1) **What are the effects of the National Board Certification Pilot Project on teachers' professional development?**

Results indicate that certified teachers and candidates are participating in a wider range of professional development activities than teachers not involved in certification. Of 11 different professional development activities presented, the median number that certified teachers and candidates reported participating in during the last 12 months was six compared with four for teachers not involved in certification.

Compared to teachers not involved in certification, certified teachers and candidates were more likely to have:

- Had colleagues critique their teaching.
- Observed other teachers teaching as part of their own professional development.
- Been active in a professional organization(s).
- Made presentations at professional meetings.
- Attended a state or national professional association meeting.
- Participated in professional development beyond licensure renewal requirements.

Certified teachers also were more likely than candidates or uninvolved teachers to have published in professional journals.

The three teacher groups were similar in the percentages reporting that they:

- Attended AEA-sponsored professional development activities/workshops.
- Participated in individual or collaborative research on a topic of interest to them professionally.
- Were mentored by another teacher in a formal relationship.
- Did graduate degree work relevant to their teaching.

Teachers were generally similar in the frequency with which they participated in these activities. In six of the eight activities, more than half the teachers reported that they participated 1-2 times during the last 12 months. The only differences were seen in that:

- Candidates reported having colleagues critique their teaching significantly more often than certified teachers and those not involved in certification.
- Candidates reported participating in individual or collaborative research on a topic of interest to them professionally significantly more often than certified teachers. Teachers uninvolved in certification did not differ from the other two groups in the frequency of this activity.

2) **What are the effects of the national board certification Pilot Project on teachers' provision of professional services to school districts?**

Results indicate that certified teachers are providing a wider range of professional services to their school districts than teachers who have not been involved in certification. The number of services provided by candidates was midway between those of certified and uninvolved teachers but was not different from these other two groups. Of 11 different professional services described, the median number that certified teachers reported providing during the last 12 months was six, compared with candidates' five, and uninvolved teachers' four.

Compared to teachers not involved in certification, certified teachers and candidates were more likely to have provided eight of the 11 services listed, including:

- Developing curricular materials for their department.
- Conducting professional development activities for colleagues.
- Critiquing the instructional approaches of their colleagues.
- Serving as a resource for their colleagues.
- Presenting demonstrations of successful teaching practices.
- Serving in a leadership capacity in their comprehensive school improvement plan.
- Serving on a school or district curriculum committee.
- Providing other professional services to their school or school district.

Certified teachers also were more likely to have received local, state, or national grants for teaching compared to the other two teacher groups.

The only similarities among the three teacher groups were the percentages reporting that they mentored a beginning teacher in a formal relationship and mentored a student teacher in a formal relationship.

The teacher groups were mostly similar in the frequency with which they provided these services. Of the six activities listed, differences were seen in only two of them:

- Candidates reported that they developed curricular materials for their department more frequently than certified teachers and those not involved in certification.
- Candidates and certified teachers reported that they served as a resource for their colleagues more often than teachers not involved in certification.

3) **What are the effects of the National Board Certification Pilot Project on teacher induction and retention in Iowa?**

The three teacher groups were generally similar in their responses to questions regarding teacher retention in Iowa. The mean number of years teachers planned to remain in teaching was roughly the same (about 12) and only 3% of respondents said they planned to discontinue teaching at the end of the school year. Almost two-thirds of teachers reported they planned to continue teaching until they were eligible for retirement or as long as they were physically able and about 20% were undecided. Less than 10% each said they would continue teaching until they could move into a non-teaching position within education, unless something better came along, or definitely planned to leave teaching as soon as they could. Though the percentages were quite small, teachers not involved in certification were more likely to report that they definitely planned to leave teaching. Almost all teachers (82%) reported that it was unlikely or very unlikely that they would move to a different state to teach; less than 10% reported it was likely or very likely. Most teachers (70%) also reported that it was unlikely or very unlikely that they would leave teaching for another career; 12% said it was likely or very likely.

The three teacher groups were also similar in their selection of the five most effective steps that could be taken to encourage teachers to remain in teaching. Of the 16 steps presented, almost all teachers identified higher salaries as one of the five most effective steps and more than half identified decreased class size. More effective student discipline, better fringe benefits and reduced workload were all identified by at least 40% of respondents. Significant differences between teacher groups were seen in the percentages selecting six of the 16 steps: certified teachers were more likely to identify more support for new teachers and performance-based

pay/incentives compared to teachers not involved in certification. Both certified teachers and candidates were more likely to say improved opportunity for professional advancement was important compared to uninvolved teachers. Conversely, teachers not involved in certification were more likely to select increased parent involvement and more effective student discipline compared to certified teachers. Compared to candidates, uninvolved teachers were also more likely so say that safer schools is an important step. These differences suggest that certified teachers, and candidates to a lesser degree, view professional advancement and performance-based pay along with support for new teachers as more effective ways to encourage teachers to remain in teaching compared to teachers not involved in certification. Teachers not involved in certification, on the other hand, view improving various types of school support as more effective ways to encourage teachers to remain in teaching.

4) **What are the effects of the National Board Certification Pilot Project on teaching quality?**

Teaching quality was measured primarily by the frequency with which teachers reported using teaching practices that reflected the NBPTS. Because collaborative and reflective practice activities are important components of the NBPTS these are also included but examined separately.

The content of the items addressing teaching quality were structured around the five core propositions of the NBPTS:

1) Teachers are committed to students and their learning.
2) Teachers know the subjects they teach and how to teach those subjects to students.
3) Teachers are responsible for managing and monitoring student learning.
4) Teachers think systematically about their practice and learn from experience.
5) Teachers are members of learning communities.

Propositions 1, 2, 3, and 5 are addressed in the questions pertaining to classroom teaching practices and are summarized separately for the three subsets of teachers who responded to these items. Propositions 4 and 5 pertain primarily to collaboration and reflective practice and are summarized separately as all teachers surveyed responded to these items.

Classroom Teaching Practices

Early Childhood Generalists

Results indicated that the combined certified/candidate teacher group is significantly different from teachers not involved in certification in terms of teaching quality measured by the NBPTS Propositions 2, 3, and 5 and in the composite teaching quality scale. Propositions 2, 3, and 5 pertain to how well teachers know the subjects they teach and how to teach them, how they manage and monitor student learning, and how they collaborate with others in their teaching. The two teacher groups are similar only in terms of Proposition 1 which pertains to teachers' commitment to students and their learning. Thus, according to these measures of teaching quality, early childhood generalist teachers of self-contained classrooms who are certified or candidates report that they use teaching practices consistent with NBPTS covering three of the four major Propositions significantly more often than teachers not involved in certification. These differences are reflected in the composite teaching quality measure as well. When responses from all 100 teachers completing this survey were examined, differences between the

certified/candidates teachers and those who had not been involved in certification were substantially larger and in the same direction.

Certified/candidate teachers and teachers uninvolved in certification are similar in terms of how well prepared they felt to teach a variety of content areas. Most rated themselves as either well prepared or very well prepared with the exception of promoting student understanding in the arts, teaching students whose first language is not English, and incorporating technology into learning.

Middle Childhood Generalists

Results indicated that the combined certified/candidate teacher group is significantly different from teachers not involved in certification in terms of teaching quality measured by the NBPTS Propositions 1 and 3, and by the composite teaching quality scale. Propositions 1 and 3 pertain to teachers' commitment to students and their learning, and how teachers manage and monitor student learning. Differences between the two teacher groups approached statistical significance in Proposition 2 which reflects how well teachers know the subjects they teach and how to teach them. The two groups are similar in terms of Proposition 5, reflecting that both groups of teachers collaborate with community members to a similar degree. Thus, according to these measures of teaching quality, middle childhood generalist teachers of self-contained classrooms who are certified or candidates report that they use classroom teaching practices consistent with NBPTS covering two of the four major Propositions and on the composite teaching quality measure more often than teachers not involved in certification. When responses from all 96 teachers completing this survey were examined, differences between the certified/candidates teachers and those who had not been involved in certification were substantially larger and in the same direction.

Results showed that compared to teachers uninvolved in certification, certified/candidate teachers perceived themselves as being more prepared to promote student understanding in English language arts, science, and social studies; in incorporating technology as an important component of learning; and in making connections between and among topics within and across disciplines.

Adolescence and Young Adulthood Science Teachers

Results indicated that certified/candidate teachers and those not involved in certification are significantly different in terms of teaching quality measured in the NBPTS Proposition 1, reflecting teachers' commitment to students and their learning. Two groups are similar in teaching quality reflected in the other three Propositions and the composite score. Thus, according to these measures of teaching quality, middle and high school level science teachers who are certified or candidates report more frequent use of classroom teaching practices reflecting Proposition 1, but otherwise appear similar to teachers not involved in the certification process.

Collaborative Activities

Results indicate that certified teachers and candidates are participating in significantly more collaborative activities than teachers not involved in certification. Of the 10 different collaborative activities described, the median number that certified teachers and candidates

reported participating in during the last 12 months was eight compared with seven for teachers not involved in certification.

Compared to teachers not involved in certification, higher percentages of certified teachers and candidates reported that they:

- Collaborated with teachers outside their school district to improve student learning.
- Collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning.

Compared to uninvolved teachers, larger percentages of certified teachers were also more likely to have:

- Collaborated with other teachers at their school to share and improve instructional strategies.
- Coordinated course content with other teachers.
- Collaborated with colleagues to develop curriculum for their school.

Candidates were more likely than uninvolved teachers to have:

- Collaborated with colleagues in planning integrated curricula.
- Collaborated with learning specialists to address the learning of special needs students.

The three teacher groups were similar in the percentages reporting that they:

- Met with a local group of teachers to study/discuss teaching issues.
- Collaborated with colleagues to develop standards, benchmarks, and performance assessment measures.
- Collaborated with administrators to improve student learning.

The three teacher groups were also different in the frequency with which they participated in collaborative activities presented:

- Certified teachers and candidates met with a local group of teachers to study/discuss teaching issues more often compared to teachers not involved in certification.
- Candidates collaborated with other teachers at their school to share and improve instructional strategies more often compared to uninvolved teachers.
- Candidates also collaborated with learning specialists to address the learning of special needs students more frequently compared to uninvolved teachers.
- Certified teachers and candidates collaborated with teachers outside their school district to improve student learning more often than uninvolved teachers.
- Certified teachers collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning more frequently than uninvolved teachers.

Reflective Practice Activities

Results indicate that certified teachers and candidates are participating in significantly more reflective practice activities than teachers not involved in certification. Of the 10 different reflective practice activities described, the median number that certified teachers and candidates reported participating in during the last 12 months was nine and 8.5, respectively, compared with eight for teachers not involved in certification.

As Table 7 shows, compared to teachers not involved in certification, higher percentages of certified teachers and candidates reported that they:

- Incorporated feedback from parents to evaluate and improve their teaching.
- Incorporated recent research findings into their teaching.
- Used student work to assess their teaching.

Certified teachers were more likely than uninvolved teachers to have:

- Incorporated feedback from students to evaluate and improve their teaching.
- Read professional publications relevant to their teaching.
- Conducted action research projects in their classroom.
- Experimented with new instructional strategies in their classroom.
- Experimented with new activities and demonstrations in their classroom.

The three teacher groups were similar in the percentages that reported they:

- Sought and used informal feedback from administrators to assess and improve their teaching.
- Deliberately aligned instruction with their school's comprehensive school improvement plan.

The three teacher groups differed in the frequency with which they participated in almost half the activities:

- Candidates incorporated feedback from parents to evaluate and improve their teaching more often compared to certified and uninvolved teachers.
- Certified teachers and candidates incorporated feedback from students to evaluate and improve their teaching more often than teachers uninvolved in certification.
- Certified teachers read professional publications relevant to their teaching more frequently than candidates and uninvolved teachers.
- Candidates experimented with new activities and demonstrations in their classroom more often than uninvolved teachers.
- Candidates sought and used informal feedback from administrators to assess and improve their teaching more often than certified and uninvolved teachers.

Perceptions of the National Board Certification Process & Its Effects

Examination of group differences provides one source of information about the effects of National Board Certification on teachers' professional development, professional services, induction and retention in teaching, and teaching quality. A second source used in this evaluation is the perceptions that teachers have about the effects of certification after they have been involved in the process. The final source is the perceptions of principals who have had teachers in their schools participate in certification. Teachers' and principals' perceptions of the effects of certification will be summarized in turn.

Teachers' Perceptions

Certified teachers and candidates near completion of the process rated the National Board Certification process very positively as a professional development experience: more than two-thirds gave it the highest rating (excellent) and another 25% rated it as good. Three percent said it was an average professional development experience and another 3% rated it as fair or poor.

Similarly, more than 60% said they definitely would recommend the National Board Certification process to their colleagues and 24% said they probably would. Another 7% reported they would probably not or definitely not, and 7% were not sure.

Almost all teachers (80% or more) agreed or strongly agreed that since beginning the National Board Certification process, they have developed stronger curricula and improved ways to evaluate student learning, are better teachers, spend more time reflecting on their teaching and ways of improving it, and that the levels of engagement in learning by their students and themselves have increased. At least two-thirds of respondents agreed or strongly agreed that they more often involved parents and other community members as resources to support their teaching practice, more easily connect their district's standards and benchmarks to their day-to-day teaching practice, and that their collaboration with other teachers is more focused on issues of teaching and student learning. The only item that did not receive overwhelming agreement was teachers' response to their involvement in professional development activities, where slightly less than half agreed or strongly agreed it had increased. Less than 10% disagreed or strongly disagreed with any of the statements except the one regarding increasing involvement in professional development.

Principals' Perceptions

Principals were generally familiar with National Board Certification and most of them agreed with the overall vision of education described in the National Board Professional Teaching Standards. Almost a third of the principals reported that their teachers' involvement in certification had improved the culture or learning climate in their school to a moderate or great extent. More than half, however, reported that it had improved the learning climate to a small extent or not at all.

Principals generally perceived no effect of the National Board Certification process on teachers' collaborative activities. At least a fourth of respondents, however, said that teachers' collaboration with other teachers had *improved somewhat* in several ways including: improving instructional strategies, staff development, mentoring other teachers, and making important educational decisions in the school. Sizable percentages of respondents (10-20%) said they did not know if the National Board Certification process had improved or harmed the teachers' collaborative activities.

Principals were asked if the certified teachers at their school who had participated in the National Board Certification process participated in any of 14 various activities more since they became certified. Well over half the respondents agreed or strongly agreed that certified teachers at their school developed stronger curricula and improved ways to evaluate student learning; were better teachers; more easily connected the district's standards, benchmarks, and performance assessments to their day-to-day teaching practices; increased the level of engagement in learning by their students and themselves; were more focused on issues of teaching and student learning; enhanced the instructional strategies they use; enhanced course content in their classrooms; and reflected more on their teaching and ways of improving it. Slightly less than half the respondents believed these teachers were more involved in professional development activities, and about a third said the teachers served on more education task forces, taught more in-service workshops, and involved parents and community members more often as resources to support their teaching practice.

Compared to principals, substantially higher percentages of teachers agreed that since going through National Board Certification they reflected more on their teaching and ways of improving it, increased the level of engagement in learning by their students and themselves, involved parents and community members more often as resources to support their teaching, were better teachers, and developed stronger curricula and improved ways to evaluate student learning.

More than half the principals believed that their teachers were better or more innovative because of the certification process while slightly less than half (46%) said the teachers were about the same. Almost 40% of the principals perceived that there was increased student learning in the classrooms of the National Board Certified teachers, while a third said they had not perceived this, and another 30% said they did not know.

Discussion

The primary questions guiding this evaluation were *"What has been the effect of the National Board Certification Pilot Project in Iowa on teachers' professional development, professional services provided to school districts, induction and retention in teaching, and teaching quality?"* As stated in the NBPTS mission, improving student learning is a central goal of certification. This study did not incorporate student learning primarily because the Legislature did not specifically request this information and because of the short time frame and limited available resources. While not measuring student learning directly, this study examines several variables linked to student learning including teacher professional development, classroom teaching practices, reflective practice, and collaboration with other stakeholders in education.

The general findings indicate that teachers who have been involved in National Board Certification in Iowa are more involved in professional development activities, collaborative activities, and reflective practice activities; provide more professional services to their school districts; and differ in their teaching quality compared to teachers who have not been involved in the certification process.

The results for teaching quality, as measured by classroom teaching practices, varied across the three different subgroups of teachers who completed this section of the survey. More differences were seen between the certified/candidate teachers and those not involved in certification in the Early Childhood and Middle Childhood Generalists groups than the Adolescence/Young Adulthood Science group. These differences were seen between certified/candidates and uninvolved teachers on NBPTS Proposition 2 (*Teachers know the subjects they teach and how to teach those subjects to students*) and Proposition 3 (*Teachers are responsible for managing and monitoring student learning*). Differences seen in these two propositions suggest that certified/candidate teachers appreciate how knowledge in their subjects is created, organized, and linked to other disciplines; command specialized knowledge of how to convey subjects; and generate multiple paths to knowledge more so than teachers uninvolved in certification. Further, candidates and certified teachers more frequently use multiple methods to meet their teaching goals, use group learning, value student engagement, and assess student progress compared to uninvolved teachers.

The teacher groups were mostly similar in terms of induction and retention in teaching. In general, teachers in this sample appear very committed to teaching in Iowa. Most reported that they had no plans to leave Iowa to teach in another state or to leave teaching for another career and almost two-thirds indicated that they planned to continue teaching until retirement or beyond. Certified teachers and candidates were more likely to report that they planned to work beyond retirement age compared to teachers not involved in certification. Though the percentages were quite small, teachers not involved in certification were more than twice as likely to report that they definitely planned to leave teaching compared to teachers who have been involved in the certification process. Interestingly, slightly more certified teachers said they were undecided in their plans to continue teaching compared to the other two groups.

Teachers involved in certification also differed from uninvolved teachers in their responses to six of the 16 strategies presented to retain teachers. These differences suggest that certified teachers, and candidates to a lesser degree, view professional advancement and performance-based pay along with support for new teachers as more effective ways to encourage teachers to remain in teaching compared to teachers not involved in certification. Teachers not

involved in certification, on the other hand, view improving various types of school support as more effective ways to encourage teachers to remain in teaching.

One limitation of this study is the reliance on self-report data. Evaluation studies of science reform (e.g., Schwager & Tushnet, 1995) have found correlations between teacher self-report data and classroom observation data to vary widely. Further, the classroom teaching measures used in this study may not be sensitive to the many interactions and changes taking place in a classroom. The frequency of teaching practices also does not inform us about the quality of the teaching practices. However, it should be noted that the NBPTS requires submission of teaching videotapes and student work samples that are scored against the standards.

Another limitation of this study is that causality cannot be inferred from it. Teachers who complete certification may be different from those who do not prior to participating in the process. Many of the results in this study suggest that change does occur during the process, however, as teachers who are candidates often score midway between certified teachers and those not involved in certification. As noted above, this type of design was selected because of the short time span provided for this study. A more thorough examination of the effects of National Board Certification would include a longitudinal design in order to examine changes in teachers' professional activities and teaching practices. It is also noteworthy that teachers, and principals to a lesser extent, perceived positive changes in their professional activities and teaching quality after they had been involved in National Board Certification.

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Table A3. Reliability estimates for general teacher survey scales.

Scale	General Teacher Survey	
	# items	_
School Support	8 n=520	.80
Collaboration	10 n=541	.72
Reflective Practice	10 n=525	.63
Professional Development	11 n=529	.65
Professional Services	11 n=511	.69

Table A4. Reliability estimates for classroom teaching practices scales by teaching level.

Scale	Early Childhood Generalist		Middle Childhood Generalist		Adolescence & Young Adulthood/ Science	
	# items	_	# items	_	# items	_
Proposition 1	7 n=91	.76	9 n=99	.79	5 n=43	.69
Proposition 2	16 n=90	.87	18 n=97	.87	29 n=39	.86
Proposition 3	24 n=84	.90	16 n=83	.85	15 n=36	.78
Proposition 5	6 n=92	.86	6 n=100	.82	4 n=43	.58
Composite	53 n=79	.95	49 n=79	.94	53 n=33	.91

Table A5. Percent of respondents by teacher group and number of times they reported participating in each professional development activity during the past 12 months.

Professional Development Activities During the Past 12 Months	Teacher Group	n	Number of Times Participated		
			1-2	3-9	10 or more
Had colleagues critique my teaching.	not involved	68	68%	25%	7%
	candidate	70	43%	48%	9%
	certified	84	63%	32%	5%
Observed other teachers teaching as part of my own professional development.	not involved	78	62%	22%	16%
	candidate	55	56%	29%	15%
	certified	85	57%	35%	8%
Attended AEA-sponsored professional development activities/workshops.	not involved	201	57%	42%	1%
	candidate	91	54%	40%	6%
	certified	121	59%	36%	6%
Was active in a professional organization(s).	not involved	135	48%	39%	13%
	candidate	79	44%	30%	26%
	certified	122	32%	51%	18%
Participated in individual or collaborative research on a topic of interest to me professionally.	not involved	108	55%	36%	9%
	candidate	63	37%	47%	16%
	certified	88	56%	35%	9%
Made presentations at professional meetings.	not involved	60	59%	38%	3%
	candidate	56	61%	32%	7%
	certified	91	62%	29%	10%
Attended a state or national professional association meeting.	not involved	82	80%	20%	0%
	candidate	56	73%	22%	6%
	certified	103	74%	23%	3%
Participated in professional development beyond licensure renewal requirements.	not involved	183	51%	40%	9%
	candidate	114	46%	38%	16%
	certified	146	49%	35%	16%

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Table A6. Percent of respondents by teacher group and number of times they reported participating in each professional service activity during the past 12 months.

Professional Service Activities During the Past 12 Months	Teacher Group	n	Number of Times Participated		
			1-2	3-9	10 or more
Developed curricular materials for my department.	not involved	180	43%	39%	18%
	candidate	99	26%	53%	21%
	certified	146	41%	42%	17%
Conducted professional development activities for colleagues.	not involved	75	68%	29%	3%
	candidate	63	54%	40%	6%
	certified	104	53%	36%	12%
Critiqued the instructional approaches of my colleagues.	not involved	34	47%	47%	6%
	candidate	33	49%	39%	12%
	certified	68	54%	29%	16%
Served as a resource for my colleagues.	not involved	198	31%	44%	25%
	candidate	110	18%	48%	34%
	certified	157	20%	43%	37%
Presented demonstrations of successful teaching practices.	not involved	65	59%	29%	13%
	candidate	52	53%	41%	6%
	certified	72	49%	31%	21%
Provided *other* professional services to my school or school district.	not involved	65	31%	31%	38%
	candidate	47	28%	50%	22%
	certified	71	19%	54%	27%

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Table A7. Perceptions of teaching preparation of Early Childhood Generalists by teacher group.

Teaching Preparation	Teacher Group	n	Not at all or not adequately prepared	Somewhat well prepared	Well prepared	Very well prepared
To make connections between and among topics within and across disciplines.	not involved	29	0%	10%	48%	41%
	certified/candidate	38	0%	11%	37%	53%
To promote student understanding in English language arts.	not involved	29	0%	10%	31%	59%
	certified/candidate	38	0%	5%	40%	55%
To promote student understanding in mathematics.	not involved	29	0%	10%	38%	52%
	certified/candidate	38	0%	11%	58%	32%
To promote student understanding in science.	not involved	29	0%	21%	41%	38%
	certified/candidate	38	5%	18%	45%	32%
To promote student understanding in social studies.	not involved	29	0%	7%	55%	38%
	certified/candidate	38	3%	18%	45%	34%
To promote student understanding in the arts.	not involved	28	7%	36%	43%	14%
	certified/candidate	35	3%	37%	37%	23%
To teach students whose first language is not English.	not involved	28	57%	36%	0%	7%
	certified/candidate	36	50%	39%	11%	0%
To incorporate technology as an important component of learning.	not involved	29	14%	28%	35%	24%
	certified/candidate	38	13%	50%	24%	13%

Table A8. Perceptions of teaching preparation of Middle Childhood Generalists by teacher group.

Teaching Preparation	Teacher Group	n	Not at all or not adequately prepared	Somewhat well prepared	Well prepared	Very well prepared
To make connections between and among topics within and across disciplines.	not involved	38	0%	32%	37%	32%
	certified/candidate	43	2%	14%	33%	51%
To promote student understanding in English language arts.	not involved	39	0%	15%	49%	36%
	certified/candidate	43	0%	7%	35%	58%
To promote student understanding in mathematics.	not involved	39	0%	5%	54%	41%
	certified/candidate	42	0%	5%	33%	62%
To promote student understanding in science.	not involved	37	8%	35%	30%	27%
	certified/candidate	41	2%	10%	46%	42%
To promote student understanding in social studies-history.	not involved	38	0%	18%	61%	21%
	certified/candidate	42	2%	7%	36%	55%
To promote student understanding in the arts.	not involved	37	35%	30%	22%	14%
	certified/candidate	43	21%	35%	28%	16%
To promote student understanding in health.	not involved	38	8%	37%	40%	16%
	certified/candidate	41	7%	20%	51%	22%
To incorporate technology as an important component of learning.	not involved	39	15%	46%	31%	8%
	certified/candidate	43	9%	26%	42%	23%
To teach students whose first language is not English.	not involved	36	64%	19%	14%	3%
	certified/candidate	33	60%	24%	6%	9%

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Table A9. Percent of respondents by teacher group and number of times they reported participating in each collaborative activity during the past 12 months.

Collaborative Activities During the Past 12 Months	Teacher Group	n	Number of Times Participated		
			1-2	3-9	10 or more
Met with a local group of teachers to study/discuss teaching issues.	not involved	223	24%	51%	25%
	candidate	105	15%	46%	39%
	certified	154	10%	53%	37%
Collaborated with other teachers at my school to share and improve instructional strategies.	not involved	222	22%	51%	27%
	candidate	105	18%	39%	42%
	certified	157	15%	50%	35%
Coordinated course content with other teacher	not involved	200	30%	43%	26%
	candidate	98	24%	42%	34%
	certified	147	18%	52%	29%
Collaborated with colleagues to develop curriculum for my school.	not involved	189	33%	52%	15%
	candidate	95	27%	47%	25%
	certified	142	28%	51%	21%
Collaborated with colleagues to develop standards, benchmarks, and performance assessment measures.	not involved	204	27%	59%	14%
	candidate	91	29%	62%	10%
	certified	139	26%	63%	12%
Collaborated with colleagues in planning integrated curricula.	not involved	148	40%	47%	13%
	candidate	85	33%	39%	27%
	certified	105	36%	43%	21%
Collaborated with learning specialists to address the learning of special needs students.	not involved	203	35%	38%	27%
	candidate	105	21%	44%	35%
	certified	138	20%	49%	31%
Collaborated with administrators to improve student learning.	not involved	173	38%	50%	12%
	candidate	87	32%	47%	21%
	certified	121	29%	57%	14%
Collaborated with teachers outside my school district to improve student learning.	not involved	129	59%	34%	6%
	candidate	73	37%	49%	14%
	certified	111	41%	42%	17%
Collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning.	not involved	112	55%	38%	6%
	candidate	69	41%	48%	12%
	certified	100	37%	44%	18%

Table A10. Percent of respondents by teacher group and number of times they reported participating in each reflective practice activity during the past 12 months.

Reflective Practice Activities During the Past 12 Months	Teacher Group	n	Number of Times Participated		
			1-2	3-9	10 or more
Incorporated feedback from parents to evaluate and improve my teaching.	not involved	161	57%	39%	4%
	candidate	102	33%	46%	22%
	certified	131	47%	40%	13%
Incorporated feedback from students to evaluate and improve my teaching.	not involved	206	37%	43%	20%
	candidate	100	21%	46%	33%
	certified	154	22%	46%	32%
Read professional publications relevant to my teaching.	not involved	240	18%	50%	32%
	candidate	111	12%	49%	40%
	certified	165	9%	34%	57%
Incorporated recent research findings into my teaching.	not involved	205	33%	45%	22%
	candidate	108	29%	55%	17%
	certified	154	25%	55%	20%
Conducted action research projects in my classroom.	not involved	104	58%	32%	10%
	candidate	56	44%	44%	13%
	certified	87	55%	38%	7%
Experimented with new instructional strategies in my classroom.	not involved	231	23%	61%	16%
	candidate	111	21%	57%	22%
	certified	162	27%	55%	19%
Experimented with new activities and demonstrations in my classroom	not involved	243	15%	61%	24%
	candidate	115	13%	50%	37%
	certified	165	16%	56%	29%
Used student work to assess my teaching.	not involved	229	12%	37%	51%
	candidate	116	9%	38%	53%
	certified	158	10%	37%	54%
Sought and used informal feedback from administrators to assess and improve my teaching.	not involved	135	65%	29%	6%
	candidate	69	41%	48%	12%
	certified	104	54%	39%	7%
Deliberately aligned instruction with my school's comprehensive school improvement plan.	not involved	198	23%	47%	30%
	candidate	91	22%	48%	30%
	certified	132	21%	53%	26%

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Appendix B
Survey Instruments

B1. General Teacher Survey

Teaching Responsibilities and Support

1. Circle each grade you are currently teaching?

Preschool Kindergarten 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th

2. What is the **main** subject area you are currently teaching? (check only 1)

- ☐ Math
- ☐ Science
- ☐ Art
- ☐ Music
- ☐ Physical Education
- ☐ Social studies/history
- ☐ Career & Technical Education
- ☐ English/language arts
- ☐ Exceptional Needs
- ☐ Other (describe)_____
- ☐ Self-contained class (responsible for teaching all or most academic subjects to one class)

3. Rate your agreement with each of these statements about how your school administrators, coworkers, and parents support your teaching effectiveness and professional development.

Support for Teaching & Professional Development	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree	Don't know
a. My school provides a positive climate for learning.	1	2	3	4	5	DK
b. My administration supports my attending professional meetings.	1	2	3	4	5	DK
c. My administrators encourage teachers to integrate new teaching strategies.	1	2	3	4	5	DK
d. I have most of the equipment and tools I need to teach effectively.	1	2	3	4	5	DK
e. Teachers at my school work together to improve student learning.	1	2	3	4	5	DK
f. I have time during the regular school week to work with my colleagues on curriculum and teaching.	1	2	3	4	5	DK
g. My school board supports my professional development activities.	1	2	3	4	5	DK
h. Parents support me in my efforts to educate their children.	1	2	3	4	5	DK

4. How many years have you been employed as a teacher? _____ years

5. Do you belong to any professional organizations? ☐ Yes ☐ No
If yes, which ones? (Please no abbreviations)

Collaboration

6. For each collaborative activity, please indicate whether you participated, and if yes, how often you participated **during the past 12 months (1 - 2 times, 3 - 9 times, or 10 or more times).**

Collaborative Activities During the Past 12 Months	No	Yes	If yes, →	1 – 2 times	3 - 9 times	10 or more times
a. Met with a local group of teachers to study/discuss teaching issues.	N	Y	→	1	2	3
b. Collaborated with other teachers at my school to share and improve instructional strategies.	N	Y	→	1	2	3
c. Coordinated course content with other teachers.	N	Y	→	1	2	3
d. Collaborated with colleagues to develop curriculum for my school.	N	Y	→	1	2	3
e. Collaborated with colleagues to develop standards, benchmarks, and performance assessment measures.	N	Y	→	1	2	3
f. Collaborated with colleagues in planning integrated curricula.	N	Y	→	1	2	3
g. Collaborated with learning specialists to address the learning of special needs students.	N	Y	→	1	2	3
h. Collaborated with administrators to improve student learning.	N	Y	→	1	2	3
i. Collaborated with teachers outside my school district to improve student learning.	N	Y	→	1	2	3
j. Collaborated with educators from colleges, universities, or other institutions and agencies to improve student learning.	N	Y	→	1	2	3

7. How have these collaborative activities affected your teaching?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

8. How have these collaborative activities affected your students' learning?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

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Reflective Practices

9. For each reflective practice activity, please indicate whether you participated, and if yes, how often you participated **during the past 12 months (1 - 2 times, 3 - 9 times, or 10 or more times)**.

Reflective Practice Activities During the Past 12 Months	No	Yes	If yes, →	1 - 2 times	3 - 9 times	10 or more times
a. Incorporated feedback from parents to evaluate and improve my teaching.	N	Y	→	1	2	3
b. Incorporated feedback from students to evaluate and improve my teaching.	N	Y	→	1	2	3
c. Read professional publications relevant to my teaching.	N	Y	→	1	2	3
d. Incorporated recent research findings into my teaching.	N	Y	→	1	2	3
e. Conducted action research projects in my classroom.	N	Y	→	1	2	3
f. Experimented with new instructional strategies in my classroom.	N	Y	→	1	2	3
g. Experimented with new activities and demonstrations in my classroom	N	Y	→	1	2	3
h. Used student work to assess my teaching.	N	Y	→	1	2	3
i. Sought and used informal feedback from administrators to assess and improve my teaching.	N	Y	→	1	2	3
j. Deliberately aligned instruction with my school's comprehensive school improvement plan.	N	Y	→	1	2	3

10. How have these reflective practice activities affected your teaching?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

11. How have these reflective practice activities affected your students' learning?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

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Professional Development

12. For each professional development activity, please indicate whether you participated, and if yes, how often you participated **during the past 12 months (1 - 2 times, 3 - 9 times, or 10 or more times).**

Professional Development Activities During the Past 12 Months	No	Yes	If yes, →	1 - 2 times	3 - 9 times	10 or more times
a. Had colleagues critique my teaching.	N	Y	→	1	2	3
b. Observed other teachers teaching as part of my own professional development.	N	Y	→	1	2	3
c. Attended AEA-sponsored professional development activities/workshops.	N	Y	→	1	2	3
d. Was active in a professional organization(s).	N	Y	→	1	2	3
e. Participated in individual or collaborative research on a topic of interest to me professionally.	N	Y	→	1	2	3
f. Made presentations at professional meetings.	N	Y	→	1	2	3
g. Attended a state or national professional association meeting.	N	Y	→	1	2	3
h. Participated in professional development beyond licensure renewal requirements.	N	Y	→	1	2	3
i. Was mentored by another teacher in a formal relationship.	N	Y				
j. Did graduate degree work relevant to my teaching.	N	Y				
k. Published in professional journals.	N	Y				

13. How have these professional development activities affected your teaching?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

14. How have these professional development activities affected your students' learning?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

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Professional Services

15. For each professional service activity, please indicate whether you participated, and if yes, how often you participated **during the past 12 months (1 - 2 times, 3 - 9 times, or 10 or more times)**.

Professional Service Activities During the Past 12 Months	No	Yes	If yes, →	1 - 2 times	3 - 9 times	10 or more times
a. Developed curricular materials for my department.	N	Y	→	1	2	3
b. Conducted professional development activities for colleagues.	N	Y	→	1	2	3
c. Critiqued the instructional approaches of my colleagues.	N	Y	→	1	2	3
d. Served as a resource for my colleagues.	N	Y	→	1	2	3
e. Presented demonstrations of successful teaching practices.	N	Y	→	1	2	3
f. Mentored a beginning teacher in a formal relationship.	N	Y				
g. Mentored a student teacher in a formal relationship.	N	Y				
h. Served in a leadership capacity in our comprehensive school improvement plan.	N	Y				
i. Received local, state, or national grants for teaching.	N	Y				
j. Served on a school or district curriculum committee.	N	Y				
k. Provided *other* professional services to my school or school district. (Describe these services):	N	Y	→	1	2	3

16. How have these professional service activities affected your teaching?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

17. How have these professional service activities affected your students' learning?

☐ Harmed a lot ☐ Harmed somewhat ☐ No effect ☐ Improved somewhat ☐ Improved a lot ☐ Don't know

Comments:

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18. For how many more years do you plan to be in teaching? _____

19. How long do you plan to continue classroom teaching? (Check only 1)

- ☐ Definitely plan to leave teaching as soon as I can.
- ☐ Will probably continue unless something better comes along.
- ☐ Until I can move to a non-teaching position within education (i.e., administrator, counselor, curriculum director, etc.).
- ☐ Until I am eligible for retirement .
- ☐ As long as I am able (physically and mentally).
- ☐ Undecided at this time.

20. How likely are you to move to a different state **to teach**?

☐ Very unlikely ☐ Unlikely ☐ As likely as not ☐ Likely ☐ Very likely ☐ Not sure

Please explain why.

21. How likely are you to leave teaching **for another career**?

☐ Very unlikely ☐ Unlikely ☐ As likely as not ☐ Likely ☐ Very likely ☐ Not sure

Please explain why.

22. What are the 5 most effective steps that could be taken to encourage teachers to remain in teaching? (Check only 5 boxes in the entire box below).

Salaries/Benefits/Advancement

- ☐ Providing higher salaries.
- ☐ Providing better fringe benefits (e.g., better health insurance programs).
- ☐ Providing performance-based pay or other pay incentives to teachers.
- ☐ Improving opportunities for professional advancement.
- ☐ Giving special recognition and/or special assignments to excellent or outstanding teachers.

Work Load

- ☐ Reducing the paperwork burden on teachers.
- ☐ Reducing teacher workload.
- ☐ Decreasing class size.

School Support

- ☐ Providing better resources and materials for classroom use.
- ☐ Improving opportunities for professional development.
- ☐ Providing more support for new teachers (e.g., mentor teacher programs).
- ☐ Giving teachers more authority in the school and in their own classrooms.
- ☐ Increasing parent involvement in the school.
- ☐ Dealing more effectively with student discipline.
- ☐ Making schools safer.
- ☐ Increasing standards for students' academic performance.

23. Describe any other steps that could be taken to encourage teachers to remain in teaching: _____

_____

_____

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National Board Certification

24. What has been your involvement in the National Board Certification process? (Check only 1)

- ☐ None, because I'm unaware of it
- ☐ None, and I am not interested
- ☐ None, but I am interested
- ☐ I withdrew, and I do not intend to restart
- ☐ I withdrew, but I intend to restart
- ☐ Future advanced candidate
- ☐ Current advanced candidate
- ☐ Currently pursuing certification
- ☐ I was certified before 1998
- ☐ I was certified in 1998
- ☐ I was certified in 1999
- ☐ I was certified in 2000

Answer Questions 25 through 31 only if you are a National Board Certification Candidate or you are a National Board Certified Teacher. If you have NOT already completed the National Board Certification Process or you will NOT be completed by August 2001, please go to Question 32 on page 8.

25. How would you rate the National Board Certification process as a professional development experience?

☐ Poor ☐ Fair ☐ Average ☐ Good ☐ Excellent

26. Would you recommend the National Board Certification process to your colleagues?

☐ Definitely not ☐ Probably not ☐ Probably ☐ Definitely ☐ Not sure

Explain why or why not?

27. To what extent do your AEA's professional development activities relate to the National Board Certification process?

☐ Not at all ☐ Small extent ☐ Moderate extent ☐ Great extent ☐ Not sure

28. Have you received any teaching awards or honors since beginning the National Board Certification process?

☐ Yes ☐ No

29. How supportive was each of the following in your pursuit of National Board Certification?

Person or Agency Support for Pursuing National Board Certification	1 Not supportive	2 Somewhat supportive	3 Supportive	4 Very supportive	Not applicable
Your curriculum director	1	2	3	4	NA
Your principal	1	2	3	4	NA
Your superintendent	1	2	3	4	NA
Your school board	1	2	3	4	NA
Iowa Office for Staff Development (UNI)	1	2	3	4	NA

30. Since beginning the National Board Certification process have you voluntarily mentored a **beginning** teacher?

☐ Yes ☐ No

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31. Since beginning the National Board Certification process to what extent do you disagree or agree that each of the statements below is true about you. **Answer this question only if you are a National Board Certified Teacher or are a candidate who will complete the process by August 2001.**

Possible Effects of the National Board Certification Process	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree	Don't know
I have developed stronger curricula and improved ways to evaluate student learning.	1	2	3	4	5	DK
I believe I am a better teacher.	1	2	3	4	5	DK
I more often involve parents and other members of my community as resources to support my teaching practice.	1	2	3	4	5	DK
I more easily connect my district's standards, benchmarks and performance assessments (i.e., state student standards) to my day-to-day teaching practice.	1	2	3	4	5	DK
The level of engagement in learning by my students and me has increased.	1	2	3	4	5	DK
My collaboration with other teachers is more focused on issues of teaching and student learning.	1	2	3	4	5	DK
My involvement in professional development activities has increased.	1	2	3	4	5	DK
I spend more time reflecting on my teaching and ways of improving it.	1	2	3	4	5	DK

Background Information

32. The next several questions concern your education history. Please write out the full name of your major(s) and institution. Report only degrees already earned. If you have received more than degree in a category (e.g., earned two B.A.s), please answer the questions based on your most recent degree earned.

32a. Do you have a bachelor's degree? ☐ Yes ☐ No If yes, what year did you receive the degree? _____

First Major:_____ Second Major:_____ Institution:_____

32b. Do you have master's degree? ☐ Yes ☐ No If yes, what year did you receive the degree? _____

Major:_____ Institution:_____

32c. Do you have a doctorate? ☐ Yes ☐ No If yes, what year did you receive the degree? _____

Major:_____ Institution:_____

33. Gender: ☐ Male ☐ Female 34. Age: _____ 35. Name:_____ (optional)

36. School District:_____(optional) 37. School:_____ (optional)

THANK YOU!

Please return this Iowa Office for Staff Development survey in the self-addressed stamped envelope to:
Center for Social & Behavioral Research/Sabin 221/University of Northern Iowa/Cedar Falls, IA 50614-0402

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B2. Early Childhood Generalist Classroom Teaching Practices Items

Early Childhood Classroom Teaching

If the majority of your students are between the ages of 3 and 8, please continue. If NOT, please skip to question 23 on page 9.

18. Please rate your agreement with each of these statements about your students and classroom teaching.

Classroom Teaching	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
a. I keep up-to-date on my knowledge of early-childhood development.	1	2	3	4	5
b. I believe all my students can experience success in my classroom.	1	2	3	4	5
c. I recognize significant changes in student behavior, performance, and social interactions as they mature throughout the year.	1	2	3	4	5
d. I am knowledgeable about my students' backgrounds.	1	2	3	4	5
e. I take students' special needs into account when planning curriculum and instruction.	1	2	3	4	5
f. My students learn how to appreciate other points of view.	1	2	3	4	5
g. I continually seek out new books, games, technology, media, manipulatives and experiments for my classroom.	1	2	3	4	5
h. Sometimes I have to rush to cover the material in the textbook.	1	2	3	4	5
i. I emphasize student autonomy in learning.	1	2	3	4	5
j. I help students take responsibility for how they respond to assignments and experiences.	1	2	3	4	5
k. Students are given choices about how they spend some of their time each day.	1	2	3	4	5
l. My students learn it is acceptable for learners to differ in their ideas and explanations.	1	2	3	4	5
m. My classroom provides a positive climate for students to work together as a community of learners.	1	2	3	4	5
n. My students know it's all right to make mistakes in learning.	1	2	3	4	5
o. I seek information from parents/guardians about each student's interests, strengths, goals, and home life.	1	2	3	4	5
p. I encourage parents/guardians to share responsibility for the academic performance of their children (e.g., parent/teacher or parent/school compact).	1	2	3	4	5

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Classroom Teaching

19. Please rate how well prepared you believe you are to do each of the following.

Teaching Preparation How prepared are you to do each of the following:	1 Not at all prepared	2 Not adequately prepared	3 Somewhat well prepared	4 Well prepared	5 Very well prepared	Not Applicable
a. To make connections between and among topics within and across disciplines.	1	2	3	4	5	NA
b. To promote student understanding in English language arts.	1	2	3	4	5	NA
c. To promote student understanding in mathematics.	1	2	3	4	5	NA
d. To promote student understanding in science.	1	2	3	4	5	NA
e. To promote student understanding in social studies.	1	2	3	4	5	NA
f. To promote student understanding in the arts.	1	2	3	4	5	NA
g. To teach students whose first language is not English.	1	2	3	4	5	NA
h. To incorporate technology as an important component of learning.	1	2	3	4	5	NA

20. Below are classroom activities that some teachers use. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. My students learn about their own and other cultures in activities.	1	2	3	4	5
b. In lessons, connections are made to students' daily lives.	1	2	3	4	5
c. My students learn how to apply what they learn to everyday problems.	1	2	3	4	5
d. I use concrete experiences in lessons.	1	2	3	4	5
e. I help students form connections between new knowledge and past ideas, experience and knowledge.	1	2	3	4	5
f. My students use hands-on/manipulative materials in learning activities.	1	2	3	4	5
g. My students use objects, charts, and graphs to represent problems and solutions in different ways.	1	2	3	4	5
h. I ask students questions to clarify their reasoning in problem solving.	1	2	3	4	5
i. My students use calculators and computers to learn concepts, problem solving, and applications of concepts.	1	2	3	4	5
j. My students work together to learn different approaches to problem solving.	1	2	3	4	5
k. I make connections across the disciplines.	1	2	3	4	5
l. My students are encouraged to discover and share their ideas with their peers.	1	2	3	4	5
m. My students learn multiple ways to solve problems.	1	2	3	4	5
n. My students predict, observe, gather, analyze, and interpret data.	1	2	3	4	5
o. My students do cooperative group-work.	1	2	3	4	5
p. My students have the opportunity to play and explore freely.	1	2	3	4	5

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Classroom Teaching

21. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. My students learn how to cooperate with their peers.	1	2	3	4	5
b. I model problem solving and creative thinking to my students.	1	2	3	4	5
c. I facilitate class discussions.	1	2	3	4	5
d. My students are encouraged to talk about their thinking and experiences with each other and with me.	1	2	3	4	5
e. My students are given the opportunity to use multiple forms of expression.	1	2	3	4	5
f. I choose materials that connect to students' interests and prior experiences.	1	2	3	4	5
g. I select tasks and materials to accommodate a wide range of abilities (e.g., journal writing, creative dramatics, dance, play, computerized instruction).	1	2	3	4	5
h. I provide students with choices of activities in different content areas.	1	2	3	4	5
i. I provide students with the opportunity to pursue questions and interests at some length.	1	2	3	4	5
j. My students have a voice in decisions about group activities and problems.	1	2	3	4	5

22. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. My students learn how to interact appropriately with their peers and adults.	1	2	3	4	5
b. My students participate in developing rules for behavior and settling their disputes.	1	2	3	4	5
c. I begin lessons by asking about students' personal experiences and thoughts on a topic.	1	2	3	4	5
d. I use assessment to guide instructional strategies and lesson plans.	1	2	3	4	5
e. My students assess their own performance.	1	2	3	4	5
f. I use performance-based assessment.	1	2	3	4	5
g. I use student portfolios in assessment.	1	2	3	4	5
h. I provide information about my educational objectives and instructional strategies to parents/guardians.	1	2	3	4	5
i. I provide information or advice to parents/guardians to help them create supportive learning environments at home (e.g., shared parent-child activities)	1	2	3	4	5
j. I involve parents/guardians in classroom activities.	1	2	3	4	5
k. I use community resources such as families, community members, agencies, and businesses in my classroom to enhance instruction.	1	2	3	4	5

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B3. Middle Childhood Generalist Classroom Teaching Practices Items

Middle Childhood Classroom Teaching

If the majority of your students are between the ages of 7 and 12, please continue. If NOT, please skip to question 23 on page 9.

18. Please rate your agreement with each of these statements about your students and classroom teaching.

Classroom Teaching	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
a. I keep up-to-date on my knowledge of childhood development.	1	2	3	4	5
b. I believe all my students can experience success in my classroom.	1	2	3	4	5
c. I use my knowledge of my students in planning both the content of and approaches to new lessons.	1	2	3	4	5
d. I am knowledgeable about my students' backgrounds.	1	2	3	4	5
e. I recognize significant changes in student behavior, performance, and social interactions as they mature throughout the year.	1	2	3	4	5
f. I take students' special needs into account when planning curriculum and instruction.	1	2	3	4	5
g. My students learn about democratic principles such as freedom, justice, and equity.	1	2	3	4	5
h. Sometimes I have to rush to cover the material in the textbook.	1	2	3	4	5
i. My classroom provides a positive climate for students to work together as a community of learners.	1	2	3	4	5
j. I help students develop responsibility for their actions.	1	2	3	4	5
k. I encourage student autonomy in learning.	1	2	3	4	5
l. I emphasize that learning is challenging and mistakes are important.	1	2	3	4	5
m. My students learn how to resolve conflicts respectfully.	1	2	3	4	5
n. My students show respect and concern for others in their interactions.	1	2	3	4	5
o. I seek information from parents/guardians about each student's interests, strengths, goals, and home life.	1	2	3	4	5
p. I encourage parents/guardians to share responsibility for the academic performance of their children (e.g., parent/teacher or parent/school compact).	1	2	3	4	5
q. I continually seek new instructional resources and evaluate a variety of materials for their suitability.	1	2	3	4	5
r. I use assessment to encourage students' continual commitment to learning.	1	2	3	4	5

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Classroom Teaching

19. Please rate how well prepared you believe you are to do each of the following.

Teaching Preparation How prepared are you to do each of the following:	1 Not at all prepared	2 Not adequately prepared	3 Somewhat well prepared	4 Well prepared	5 Very well prepared	Not applicable
a. To make connections between and among topics within and across disciplines.	1	2	3	4	5	NA
b. To promote student understanding in English language arts.	1	2	3	4	5	NA
c. To promote student understanding in mathematics.	1	2	3	4	5	NA
d. To promote student understanding in science.	1	2	3	4	5	NA
e. To promote student understanding in social studies-history.	1	2	3	4	5	NA
f. To promote student understanding in the arts.	1	2	3	4	5	NA
g. To promote student understanding in health.	1	2	3	4	5	NA
h. To incorporate technology as an important component of learning.	1	2	3	4	5	NA
i. To teach students whose first language is not English.	1	2	3	4	5	NA

20. Below are classroom activities that some teachers use. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. I use student diversity to teach academic, social and civic lessons.	1	2	3	4	5
b. I design activities and ask questions that require students to think about ethical issues and conflicts from a variety of perspectives.	1	2	3	4	5
c. My students use materials such as maps, timelines, manipulatives, and tools to interpret and organize data.	1	2	3	4	5
d. My students use computers and calculators to learn concepts, problem solving, and applications of concepts.	1	2	3	4	5
e. My students are required to explain their reasoning for their opinions.	1	2	3	4	5
f. My students apply what they learn to real-world problems.	1	2	3	4	5
g. My students work collaboratively on open-ended problems to explore multiple solutions.	1	2	3	4	5
h. I integrate and connect students' prior knowledge with current learning.	1	2	3	4	5
i. I create tasks and problems requiring students to think critically and analytically about the world.	1	2	3	4	5
j. I make connections across the disciplines.	1	2	3	4	5

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Classroom Teaching

21. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. I emphasize process and problem-solving skills.	1	2	3	4	5
b. I use real life examples, student experiences, the media, and my own experiences in my lessons.	1	2	3	4	5
c. I present opportunities for students to form connections between and among subject areas, school and daily life.	1	2	3	4	5
d. My students work on group activities requiring the practice of democratic processes.	1	2	3	4	5
e. I assist students in using existing knowledge to pose, explore and solve new problems.	1	2	3	4	5
f. My students work on open-ended activities that address significant problems.	1	2	3	4	5
g. My students do cooperative group-work.	1	2	3	4	5
h. I use metaphors, analogies, and illustrations to develop student reasoning.	1	2	3	4	5
i. My students explore subjects and problems that interest them.	1	2	3	4	5
j. I use materials that connect students' lives to events and people in the community and world.	1	2	3	4	5
k. My students have input into decisions about activities.	1	2	3	4	5

22. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. I involve students in setting expectations for classroom behavior.	1	2	3	4	5
b. I use assessment to guide teaching decisions and evaluate instructional strategies.	1	2	3	4	5
c. I use student journals in assessment.	1	2	3	4	5
d. I use performance-based assessment.	1	2	3	4	5
e. My students assess their own performance.	1	2	3	4	5
f. I use student portfolios in assessment.	1	2	3	4	5
g. I provide information about my educational objectives and instructional strategies to parents/guardians.	1	2	3	4	5
h. I provide information or advice to parents/guardians to help them create supportive learning environments at home (e.g., shared parent-child activities).	1	2	3	4	5
i. I involve parents/guardians in classroom activities.	1	2	3	4	5
j. I use community resources such as families, community members, agencies, and businesses in my classroom to enhance instruction.	1	2	3	4	5

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B4. Adolescence and Young Adulthood/Science Classroom Teaching Practices Items

Middle Level/High School Science Classroom Teaching

If the majority of your students are between the ages of 14 and 19, please continue. If NOT, please skip to question 23 on page 9.

18. Please rate your agreement with each of these statements about your students and classroom teaching.

Classroom Teaching	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
a. My classroom provides a positive climate for students to work together as a community of learners.	1	2	3	4	5
b. I believe all my students can experience success in my classroom.	1	2	3	4	5
c. I take students' special needs into account when planning curriculum and instruction.	1	2	3	4	5
d. I consider myself a "master" science teacher.	1	2	3	4	5
e. I have implemented recommendations from the National Science Education Standards in my science teaching.	1	2	3	4	5
f. My students learn how to resolve conflicts respectfully.	1	2	3	4	5
g. Sometimes I have to rush to cover the material in the textbook.	1	2	3	4	5
h. I believe it's more important to teach a variety of science topics than fewer topics in greater depth.	1	2	3	4	5
i. I promote student autonomy and control of science explorations.	1	2	3	4	5
j. I am well prepared to incorporate technology as an important component of learning.	1	2	3	4	5
k. I recognize significant changes in student behavior, performance, and social interactions as they mature throughout the year.	1	2	3	4	5
l. I am knowledgeable about my students' backgrounds.	1	2	3	4	5
m. My students show respect and concern for others in their interactions.	1	2	3	4	5
n. I encourage parents to share responsibility for the academic performance of their children (e.g., parent/teacher or parent/school compact).	1	2	3	4	5

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Classroom Teaching

19. Below are classroom activities that some teachers use. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. I integrate and connect students' prior knowledge with current learning.	1	2	3	4	5
b. My students do hands-on/laboratory activities or investigations to learn about science concepts.	1	2	3	4	5
c. My students watch audio visual presentations (e.g., videotapes, CD-ROMs, Videodises, television programs, films, or filmstrips).	1	2	3	4	5
d. My students use computers in science for gathering additional information, tutorials, simulations, proofs, or programming.	1	2	3	4	5
e. My students complete routine exercises or problems from worksheets, workbooks, or textbooks.	1	2	3	4	5
f. My students design or implement their own investigations.	1	2	3	4	5
g. My students generate hypotheses that may lead to expanded activities during investigations.	1	2	3	4	5
h. I assign activities requiring students to analyze, interpret, predict, or synthesize information.	1	2	3	4	5
i. I design activities and ask questions that require students to think about ethical issues and conflicts from a variety of perspectives.	1	2	3	4	5

20. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. My students work on extended science investigations or projects.	1	2	3	4	5
b. My students are required to explain their reasoning for their opinions.	1	2	3	4	5
c. My students consider the results of their investigations and generalize these results to other problems.	1	2	3	4	5
d. I make connections across the science curriculum.	1	2	3	4	5
e. I use cooperative group work to teach science concepts.	1	2	3	4	5
f. I use the textbook as the primary instructional tool.	1	2	3	4	5
g. I facilitate whole-class discussions to encourage student-to-student interactions.	1	2	3	4	5
h. My students use supplementary printed materials other than textbooks.	1	2	3	4	5
i. I design lessons to provide purposeful connections between science and other disciplines.	1	2	3	4	5
j. My students learn how science is influenced by people's values and opinions.	1	2	3	4	5
k. My students learn that scientific progress is based on evidence and reasoning.	1	2	3	4	5

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Classroom Teaching

21. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. My students are encouraged to share their scientific hypotheses, ideas, and data with their peers.	1	2	3	4	5
b. My students have a voice in decisions about how and what they learn in science.	1	2	3	4	5
c. I select activities related to students' interests and experiences.	1	2	3	4	5
d. I use performance tasks to test students' scientific inquiry skills.	1	2	3	4	5
e. I use assessment information in planning for future lessons and guiding teaching decisions.	1	2	3	4	5
f. I use student portfolios in assessment.	1	2	3	4	5
g. I give predominantly short-answer tests (e.g., multiple choice, true/false, fill in the blank).	1	2	3	4	5
h. I give tests requiring open-ended responses (e.g., descriptions, explanations).	1	2	3	4	5
i. My students assess their own performance.	1	2	3	4	5
j. I involve students in setting expectations for classroom behavior.	1	2	3	4	5
k. My students and I discuss science-related careers.	1	2	3	4	5

22. Please indicate how often, if at all, you include each activity.

Classroom Teaching	1 Never	2 A few times a year	3 Once or twice a month	4 About once a week	5 Two or more times/week
a. My students learn how different approaches can be used to investigate a science problem.	1	2	3	4	5
b. My students learn how science and technology are part of their out-of-school life.	1	2	3	4	5
c. I begin science lessons by asking about students' personal experiences and thoughts on a topic.	1	2	3	4	5
d. My students learn about current and historical scientific events and scientists' lives.	1	2	3	4	5
e. My students discuss current societal issues related to science.	1	2	3	4	5
f. I provide information about my science program to parents/guardians.	1	2	3	4	5
g. I use community resources, such as families, community members, agencies, and businesses to enhance instruction.	1	2	3	4	5
h. I have two-way communication with the parents/guardians of my students.	1	2	3	4	5

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B5. Principal Survey

National Board Certification for Teachers

1. How familiar are you with the process of National Board Certification for K-12 teachers?

☐ Very familiar ☐ Fairly familiar ☐ Somewhat familiar ☐ Not at all familiar **(If not at all, go to Question 6)**

2. Please indicate the extent of your agreement with the overall vision of education described in the National Board Certification Teaching Standards.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

3. To what extent are the National Board Certification standards connected to your school improvement plan?

☐ Not at all ☐ Small extent ☐ Moderate extent ☐ Great extent ☐ Not sure

4. To what extent do your AEA's professional development activities relate to the National Board Certification process?

☐ Not at all ☐ Small extent ☐ Moderate extent ☐ Great extent ☐ Not sure

5. Should National Board Certification be tied to teacher compensation?

☐ Definitely not ☐ Probably not ☐ Probably ☐ Definitely ☐ Not sure

6. Are you using Phase III funds to support teachers' National Board Certification process? ☐ Yes ☐ No ☐ N/A

If yes, how are these funds used? _____

_____

_____

7. What, if any, other district-level financial support and resources are available to support teachers' National Board Certification process (e.g., professional days)? _____

_____

_____

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8. Has one or more teachers in your school participated in or completed the National Board Certification Process?

☐ Yes ☐ No **(If no, go to Question 16)**

9. To what extent have you been involved in your teachers' pursuit of National Board Certification?

☐ Not at all ☐ Small extent ☐ Moderate extent ☐ Great extent ☐ Not sure

10. In which of the following activities did you participate as part of your involvement in your teachers' National Board Certification process? (check all that apply)

☐ Exchanged informative memos
☐ Provided videotaping
☐ Provided coaching
☐ Reviewed portfolios or videotapes
☐ Provided district financial support
☐ Located resources to assist teachers
☐ Provided informal encouragement
☐ Provided formal recognition
☐ None of the above

11. To what extent has the National Board of Certification process affected each of the items below?

Consequences of the National Board Certification Process	1 Not at all	2 Small extent	3 Moderate extent	4 Great extent	Don't know
Interfered with your teachers' teaching while they were pursuing certification?	1	2	3	4	DK
Improved the culture or learning climate in your school?	1	2	3	4	DK
Created conflict among teachers at your school?	1	2	3	4	DK

12. How, if at all, has the National Board Certification process improved or harmed **collaboration between the teachers involved in this process and each of the following?**

Collaboration Among Teachers	1 Harmed a lot	2 Harmed somewhat	3 No change	4 Improved somewhat	5 Improved a lot	Don't know
Other teachers to improve instructional strategies?	1	2	3	4	5	DK
Other teachers on curriculum development?	1	2	3	4	5	DK
Other teachers on staff development?	1	2	3	4	5	DK
Other teachers through mentoring?	1	2	3	4	5	DK
Other teachers on textbook selection committees?	1	2	3	4	5	DK
Other teachers on course content?	1	2	3	4	5	DK
Other teachers on research projects?	1	2	3	4	5	DK
Learning specialists to address the learning of special needs students?	1	2	3	4	5	DK
Teachers outside the school on teaching issues?	1	2	3	4	5	DK
School and community resources?	1	2	3	4	5	DK
Parents to improve student learning?	1	2	3	4	5	DK
Colleagues in making important educational decisions in the school?	1	2	3	4	5	DK

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13. Indicate your agreement with each statement about the effects of the National Board Certification process. **In general, do you agree or disagree that the teacher(s) at your school who have participated in the National Board Certification process do each of the activities listed below more now than they did before they were certified?**

Effects of National Board Certification	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree	Don't know
Belong to more professional organizations.	1	2	3	4	5	DK
Receive more grants or awards for teaching.	1	2	3	4	5	DK
Serve on more local, state, or national education task forces.	1	2	3	4	5	DK
Teach more in-service workshops.	1	2	3	4	5	DK
Develop stronger curricula and improved ways to evaluate student learning.	1	2	3	4	5	DK
Are better teachers.	1	2	3	4	5	DK
Involve parents and other members of the community more often as resources to support their teaching practice.	1	2	3	4	5	DK
More easily connect the district's standards, benchmarks and performance assessments (i.e., state student standards) to their day-to-day teaching practice.	1	2	3	4	5	DK
Increase the level of engagement in learning by their students and themselves.	1	2	3	4	5	DK
Are more focused on issues of teaching and student learning.	1	2	3	4	5	DK
Have enhanced the instructional strategies they use.	1	2	3	4	5	DK
Have enhanced the course content in their classrooms.	1	2	3	4	5	DK
Are more involved in professional development activities.	1	2	3	4	5	DK
Reflect more on their teaching and ways of improving it.	1	2	3	4	5	DK

14. Do you believe these teachers are "better" or more innovative because of the certification process?

☐ Better ☐ About the same ☐ Poorer

15. Do you perceive that there is increased student learning in the classrooms because of the National Board Certified teachers?

☐ Yes ☐ No ☐ Don't know

If yes, what evidence supports this belief?

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Additional Comments

16. Comments regarding the National Board Certification process for teachers:

National Board Certification for Administration

17. Would you support a National Board Certification process for administrators?

☐ Definitely not ☐ Probably not ☐ Probably ☐ Definitely ☐ Not sure

18. If a National Board Certification process for administrators were developed, how likely would you be to participate?

☐ Very unlikely ☐ Unlikely ☐ Neutral ☐ Likely ☐ Very likely

Demographics

19. Gender: ☐ Male ☐ Female

20. Number of students enrolled in your school district:

☐ < 250 ☐ 250-399 ☐ 400-599 ☐ 600-999 ☐ 1,000-2,499 ☐ 2,500-7,499 ☐ 7,500+

21. School: _____ (optional)

22. Years of administrative experience at this school: _____

23. Total years of administrative experience: _____

24. Name_____ (optional)

THANK YOU!

Please return this Iowa Office for Staff Development survey in the self-addressed stamped envelope to:
Center for Social & Behavioral Research/Sabin 221/University of Northern Iowa/Cedar Falls, IA 50614-0402

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